The Infantry School
MAILING LIST

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Containing the Latest Thought on Infantry

VOLUME XXV

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PREFACE

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CHAPTER 1

Motor Vehicle Operation in the Desert and in Extreme Cold

*"This war is a new kind of war. It is different from all other wars of the past, not only in its methods and weapons, but also in its geography. It is warfare in terms of every continent, every island, every sea. * * * We will continue increasingly the policy of carrying the war to the enemy in distant lands. * * *"*

—PRESIDENT ROOSEVELT

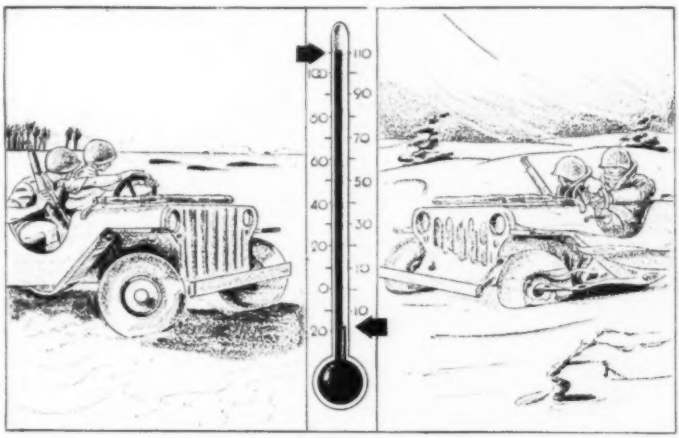


FIGURE 1.

Theaters of operations already opened involve the extremes of weather — from the north African deserts to "Down Under," and up to the metal-brittling cold of the Russian steppes.

The ratio of motor vehicles to men in the United States army is high, and a large proportion of the total number of men in the army must be trained to keep the motor vehicles rolling under all conditions of weather and terrain, in any part of the world.

Successful operation of motor vehicles either in the desert or in extremely cold areas requires a high degree of resourcefulness as well as detailed preparation on the part of the responsible personnel. This article deals with some of the more significant phases of operating motor vehicles under conditions of extreme climates.

PART I

DESERT OPERATIONS

Desert areas throughout the world are indicated by figure 2.

A thorough familiarity with the difficult operating conditions which will be encountered in the desert, and the means of minimizing the adverse effects of those conditions is essential to successful desert operations.

Conditions peculiar to the desert are:

1. Intense heat during daylight hours, contrasted with chilling atmosphere at night.
2. Frequent and sudden windstorms, carrying particles of sand and dust which penetrate and scour everything in the path of the storm.
3. Lack of natural concealment.
4. Lack of roads, landmarks, and color-contrast by which direction may be maintained.
5. Treacherous, uncertain nature of loose, sandy dunes and slopes.
6. Lack of adequate water sources.
7. Great distances between sources of supplies.

Each of these characteristics directly affects any operation involving the use of motor vehicles. Their interrelationship makes impossible a separate discussion of each characteristic. As a means of organizing our discussion and

offering suggestions as to how to counteract and minimize the ill effects of these difficult conditions, we will discuss them under the following main headings:

1. Desert temperatures.
2. Sand and dust.
3. Maintenance of direction.
4. Antiaircraft protection.
5. General precautions.

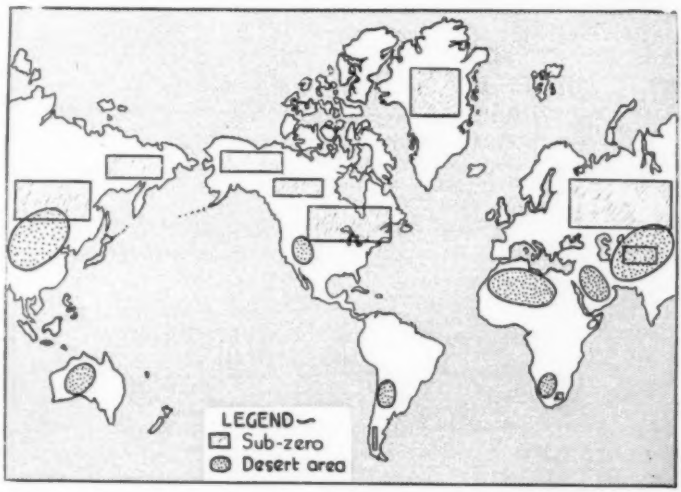


FIGURE 2.

SECTION I

DESERT TEMPERATURES

Extreme heat retards efficient operation of the cooling system of a motor vehicle, causing the engine to overheat, and water to boil off. This can be only partially remedied by the use of the improved condenser tank on the cooling system. This condenser tank is similar to that installed on the 1941, 1½-ton Quartermaster trucks.

Careful maintenance of the radiator and hose connections must be continuous in order to prevent loss of coolant. The fan belt and fan must be inspected frequently to ensure proper functioning.

Flushing of the radiator and cleaning of the external surfaces of the engine block must be done at each halt where water is available. Extra water for the radiator must be carried on the vehicle.

Experience of the British army in the Libyan desert has proved that oversized cooling systems are desirable. Certain American-made motor vehicles used by the British were found to have cooling systems which were inadequate for desert operations. This condition was greatly improved by the addition of two blades to the ordinary four-bladed radiator fan. As a precautionary measure, it is advisable to replace the petcocks of the cooling system with well-tightened plugs.

The British army recommends that all motor vehicles be headed into the wind whenever halted, to assist in cooling the engine. However, this expedient should be employed only when the wind is relatively free of sand and dust.

The cooling system of a motorcycle consists of the cooling effect of the air on the engine. Because of the hot, arid desert winds, motorcycles have been found to be definitely unsuited for desert use.

Experiments have shown that the rate of tire wear at 90° Fahrenheit is almost double that at 70° Fahrenheit. The maximum life of the army "run-flat" tires, when used exclusively in desert operations is 10,000 miles; that of the standard pneumatic tire operated under such conditions is 2,000 miles.

Extreme heat causes air pressures within pneumatic tires to increase. For efficient sand traction, tires should be checked with a tire gauge at every halt in order to maintain tire pressures of from 25 to 28 pounds per square inch. In areas of extremely loose sand, pressures should be lowered to 10 or 15 pounds. Before operating again on firmer surfaces, the pressure should be increased in order to prevent excessive wear.

Since all rubber materials are short-lived under these conditions, ample replacements must be carried. Rubber mountings, hoses, and gaskets tend to shrink, or become soft, sticky, or gummy when exposed to extreme heat for extended periods. Connections must be tightened frequently, and rubber parts often replaced.

All rubber supplies carried must be protected from the direct rays of the sun. They must be separated in boxes, or they may become fused. Spare inner tubes must be removed from their individual packing boxes, slightly inflated and powdered with tire talc to prevent stickiness.

All fuel lines exposed directly to the rays of the sun or the heat of the engine will have a tendency to "vapor-lock" and must therefore be well insulated. Poor carburetion, caused by air leaking past a heat-shrunk carburetor gasket, will be a common occurence. Carburetor gaskets should be tightened frequently. Accurate adjustment of carburetion and ignition systems must be maintained.

Heat causes extreme pressure lubricants to expand greatly and thin down to an easy flowing condition. This will result in the lubricant seeping by the grease seals and damaging brake linings if all gear cases are not checked frequently and maintained at the *minimum* safe level. The wide variation in temperatures requires that all lubricants be of the constant viscosity type and of the best quality. Unless lubricants are of this type, they will become more viscous as a result of the lower night temperatures and will cause difficult starting.

Sealed gasoline supply tanks should not be completely filled at the supply point. Space must be allowed within the tank to permit gasoline expansion caused by rising temperatures.

Each individual must be provided with light garments which will protect all parts of the body from sunburn and blistering. Other desirable articles of individual equipment include sun helmets, sunglasses and neck cloths. The extreme heat will require insulation and fans for the comfort of crews of closed vehicles.

The contrast of hot days with cold nights makes vehicle operation difficult. The chill atmosphere during darkness affords relief to personnel after exposure to the direct rays of the desert sun only if there is a sufficient supply of blankets and clothing on hand to give protection from the much lower night temperatures.

Desert temperatures start to decrease at sundown; therefore, travel between sundown and sunup is more comfortable. Also, motor vehicle maintenance operations can be performed most conveniently during the hours of darkness. Under combat conditions, lightproof tarpaulins must be placed to screen work lights.

SECTION II

SAND AND DUST

In the desert plains, high winds are frequent. These winds, or "siroccos," carry in suspension, great quantities of dry sand and dust. This material is of a volcanic nature, containing pumice, and has a very penetrating and scouring effect. All trails made by a preceding motor vehicle column are quickly obliterated. Continuation of a march during such a storm is impossible. Advance planning and the institution of precautionary measures will do much to assure the well-being of personnel and the proper care of motor vehicles.

Anti-dust respirators should be worn by all personnel. During a storm, all motor vehicle columns must be halted, and all vehicles headed downwind. An ample supply of dust covers should be available to hood the motor of each vehicle and protect it from the abrasive sand and dust.

All watches, optical equipment, compasses, electric generators and motors, carburetor and distributor ignition systems must be dust-sealed.

Crankcase breather and oil filter pipes should be equipped with dustproop caps. It is recommended that the breather pipe be extended upward, instead of downward, thereby allowing clean air from the area of the engine to be drawn into the crankcase.

All vehicles must be equipped with air cleaners of the heavy duty, oil type. They must be inspected daily to ensure their being kept clean.

All vehicles should be equipped with oil filters of the heavy duty type to filter out the abrasive material which enters the oil system during duststorms. Under desert operating conditions, it will be found necessary to replace the cartridges of these oil filters at very frequent intervals. Therefore, an ample supply of cartridges in second echelon maintenance is a necessity. The use of baffle-type oil filters is recommended. The *Cuno* oil filter is of this type. Filters must be removed and cleaned at frequent intervals.

All supplies of gasoline, lubricants, water, and food must be carried in dustproof, sealed containers.

SECTION III

MAINTENANCE OF DIRECTION

Because of the lack of roads, trails or landmarks, maintenance of direction is difficult. Individuals should be required to be proficient in the "watch-sun" method of establishing direction during the day; they should also be familiar with the method of recognizing the pole star and Southern Cross so that they may orient themselves at night. Each vehicle should be furnished a compass and a route chart, showing distances to be traveled in each direction. The use of the wet compass is recommended because of the presence of local magnetic disturbances in many places in the desert.

The advance party should locate detours around such obstacles as sand drifts, "camel humps," "sand seas," "rat holes" and rocky, rough terrain. Such detours should be on the lee side of slopes. Vehicle tracks on the desert are quickly obliterated by shifting sands; therefore, careful marking of routes is essential. The British have successfully utilized their discarded food and gasoline tins for this purpose, the advance detachment dropping them at close intervals along the route.

Units should develop standing operating procedures for desert operations, and each individual of the command should know his unit's procedure as concerns his individual actions. Standing procedure should include specific actions to be taken when a vehicle becomes lost from the column or has a breakdown. A mechanically efficient vehicle should always halt and remain with any disabled vehicle until repairs are made and the column rejoined. (This is called the "buddy system.")

Driving at increased speed to overhaul a column should never be permitted because of the intense heat and the treacherous sand. High speed results in a disproportionate increase in wear and tear on vehicles, and a greater oil, gasoline, and water consumption. High speed also increases the danger of front wheels locking in heavy sand while negotiating a curve, causing the vehicle and its cargo to overturn.

In order that each vehicle may be as nearly self-sufficient as possible in the event it becomes separated from the rest of the column, each should be equipped with the following:

1. A complete set of driver's hand tools, including an air pump to inflate tires and to remove dust and sand from clogged fuel lines.

2. A double set of pioneer tools so that the crew may assist in any route expedient.

3. Complete ration and water supply for four or five days.

4. Reserve gasoline supply sufficient for at least 100 miles.

5. A small, group-cooking set, so that the personnel will be adequately provided for until they rejoin the column.

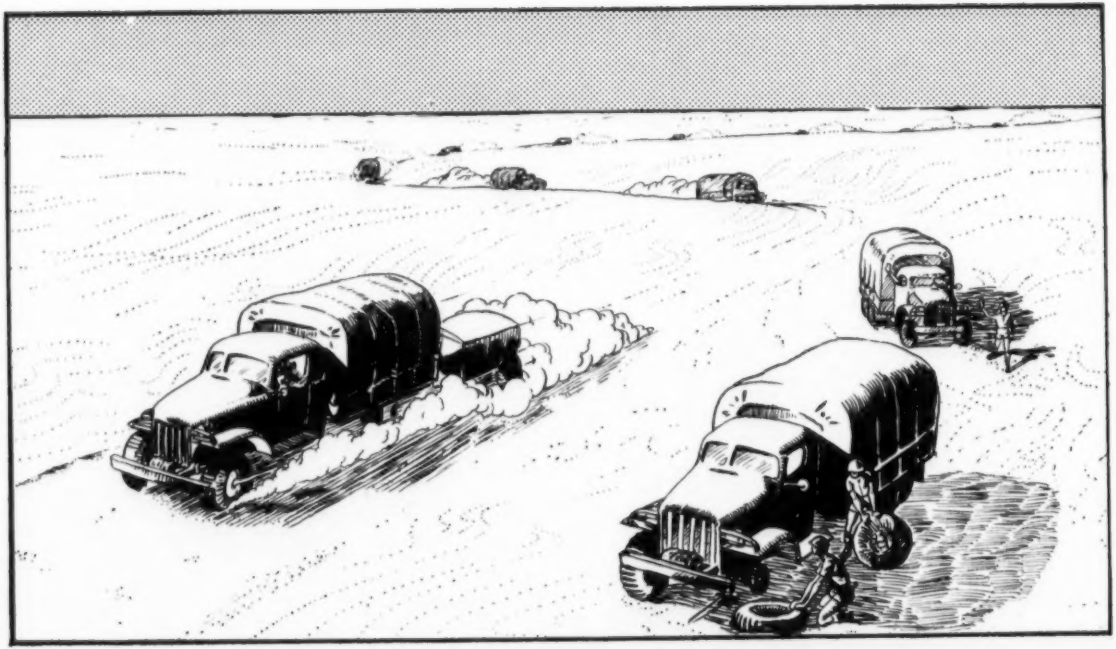


FIGURE 3.

A mechanically efficient vehicle should always halt and remain with any disabled vehicle until repairs are made and the column rejoined. This is called the "buddy system."

SECTION IV

ANTIAIRCRAFT PROTECTION

Artificial means of concealment from air observation are ineffective on the desert. Camouflage nets are of limited value because air reconnaissance is usually made in early morning or late afternoon, when objects cast the maximum shadows. The most effective means of passive protection is dispersion, at least 100 to 150 yards being maintained between vehicles during the march. Such dispersion will also tend to lessen the visibility of the dust cloud raised by a moving column. Vehicles must not be closed up at halts.

Active measures of antiaircraft protection must be instituted. Air guards should be posted on all large trucks to give the earliest possible warning in case of air attack. Antiaircraft weapons must be manned and ready for prompt operation.

SECTION V

GENERAL PRECAUTIONS

A study of the special characteristics of desert country indicates the importance of the following points:

1. The scarcity and inferior quality of the water on the desert oases necessitates careful conservation of the emergency supply carried for both vehicles and crews.

2. Supplies of all types—gasoline, oil, food, and water—must be examined carefully at the initial point before loading, as well as at all halts enroute, to avoid leaks or losses caused by damaged or broken containers.

3. All vehicles should be equipped with front wheel drive units.

4. Vehicles of ½-ton capacity or more should be equipped with winches and should carry ground anchors.

5. Wheels equipped with single, oversized, low-pressure tires do not have as much slicing effect on desert sand crusts as do dual tires of equal surface contact.

6. Sand and stones have a tendency to pile up between dual tires.

7. Multiple-wheel drive trucks are more desirable than tractors, since the terrain in general is level, with a crusted surface on which such trucks can maintain a good rate of speed.

8. Relatively smooth, standard-tread tires should replace all special type tires which have heavy anti-skid treads.

9. Each vehicle should be equipped with individual means to assist in extricating itself from sand holes. A reinforced wire netting, together with a jack having a large base, will serve this purpose. Other devices which have been found adequate for this purpose are:

(*a*) Two reinforced canvas sand mats, 15 inches wide and 15 feet long.

(*b*) Two light, metal sand channels, 1 foot wide by 6 feet long, containing tractional cleats on the ground surface side.

10. The rough and heavy sand routes to be traveled will increase the wear and tear on the engine and all other parts of the vehicle—mounting bolts, frame cross-members, springs, axles, steering assemblies, and wheel bearings. Efficient maintenance and supply of spare parts are essential.

11. Greatly increased fuel consumption is to be expected, and adequate supply arrangements must be made.

PART II

OPERATION IN SNOW AND EXTREME COLD

Of the land area north of the equator, more than half is characterized by cold climates. While ocean currents, such as the Gulf Stream, raise the temperatures of certain sections, in general the areas beyond the 40th parallels of latitude are definitely within the zones of extreme cold.

A prerequisite to successful motor vehicle operation in cold climates is the choice of capable, experienced, adaptable, and resourceful personnel to operate and maintain all equipment that is to be used.

Specifically, the adverse effects of such climates on motor vehicles and their operation are:

1. Effects of freezing and thawing on—
   - *a.* Cooling systems.
   - *b.* Lubricants, brake fluids, and shock absorber fluids.
   - *c.* Carburetion, compression, and ignition.
   - *d.* Fuel and air systems.
   - *e.* Storage batteries.
   - *f.* Personnel and supplies.
2. Effects of blizzards and snow storms on—
   - *a.* Visibility and maintenance of direction.
   - *b.* Route obliteration and blocking of roads.
3. Effects of snow and ice on—
   - *a.* Traction.
   - *b.* Camouflage.

Each of these effects is considered separately with a view toward presenting some means of overcoming them.

SECTION I

EFFECTS OF FREEZING AND THAWING

Cooling Systems

Antifreeze solutions added to protect motor vehicle cooling systems during operation in cold climates must be noncorrosive, non-viscous, nonprecipitant of sludge, and be mixable with water. Also, they must have a relatively high boiling point so they will not evaporate during periods of thaw or engine overheating. Figure 4 illustrates the relative efficiency of the solutions commonly used as antifreeze agents in motor vehicle cooling systems.

Both methyl and denatured alcohol will boil within the normal operating temperature range of a gasoline engine: they must therefore frequently be checked and renewed from time to time throughout a cold weather period. They have a disagreeable odor and will remove paint or lacquer from finished surfaces. They offer little resistance to flow, being of a very light consistency, and mix readily with water.

Glycerine has a very high boiling point; therefore it will not evaporate when used in cooling systems. It does not attack paint or lacquer and it has no odor. However, it has two undesirable characteristics as an antifreeze agent: first, it has a tendency to seep through the smallest opening or crack and therefore is easily lost; and second, it becomes slightly viscous or heavy at low temperatures and is therefore not recommended for use in cooling systems at temperatures lower than -40° Fahrenheit. Glycerine mixes readily with water or alcohol. A mixture of alcohol with a specific gravity of .79 and glycerine with a specific gravity of 1.26, provides a good antifreeze agent. Such a mixture, however, has a specific gravity so nearly equal to that of water that the concentration of this mixture in water cannot be checked by the use of an hydrometer.

"Prestone" (Ethylene Glycol) is an ideal antifreeze agent. It is noncorrosive and does not evaporate. It does not attack paint or lacquer, has no odor, and is non-viscous at low temperatures. It can be reused again each succeeding winter, provided it is clean (blue or green in color), with sufficient

ANTIFREEZE AGENT	Boiling Point (F)	Pints of Agent per Gallon of Water to Prevent Freezing at Temperature Shown (Fahrenheit)								
		+10°	0°	−10°	−20°	−30°	−40°	−50°	−60°	−70°
Methyl (wood) Alcohol	148°	2	2½	3	3¼	4	5	5½	X	X
Ethyl (denatured) Alcohol	172°	2½	3	3½	4	5	5½	6	6½	X
Glycerine	227°	3	3½	3½	4	5	X	X	X	X
Ethylene-glycol (Prestone)	330°	2	2½	3	3½	4	4½	4½	5	5

FIGURE 4.

concentration to give protection to at least 10° above zero after being refortified with the proper rust-preventive agent. It must be stored in carefully selected containers since it will seep through the smallest opening.

The following precautions should be taken before installing antifreeze solutions:

1. Thoroughly flush the cooling system. The radiator and the cylinder block should be flushed out separately in order not to transfer any residue from one unit to the other.

2. Check the cooling system for leaks; tighten the hose connections and replace hoses if necessary.

3. If the vehicle is equipped with a hot water heater, add one gallon to the rated fluid capacity of the cooling system when calculating the ratio of mixture of antifreeze and water.

4. Check thermostats.

5. Use radiator covers to accelerate and maintain normal engine-operating temperatures. These covers may be improvised locally. Although antifreeze solutions prevent freezing, they do not increase engine temperatures.

6. Check the fan belt for adjustment or weakness. Replace the belt if necessary. Do not use rubber fan belts at temperatures below -20° Fahrenheit. Use leather, fiber, or synthetic rubber fan belts.

7. Replace the water pump if it leaks. Be sure that the pump is properly lubricated.

8. Leave sufficient air space in the cooling system to allow for expansion of the antifreeze solution, and to prevent loss of solution through overflow pipes.

9. Tag all cooling systems containing antifreeze solutions with a note indicating the type and quantity of antifreeze the system contains. Whenever cooling systems are emptied of their liquid coolant, the steering wheel should be tagged to indicate that fact.

LUBRICANTS, BRAKE FLUIDS, AND SHOCK ABSORBER FLUIDS.

Low temperatures cause lubricating oils and greases to become more viscous; oils do not flow and greases have a tendency to harden and "channel," thus preventing the working metal surfaces from retaining a protective coating of

lubricant. When it is suspected that oils and greases have become frozen or plastic, the engine should not be started. Check the oil condition on the bayonet oil gauge and if the lubricant is in plastic form, some of the following steps should be taken, depending upon the lubricants used and the existing temperature:

1. Tow the vehicle to a warm enclosure where it should remain until the oil has thawed. If no warm enclosure is available, cover the engine with a tarpaulin and place fire pots under the tarpaulin. A plain kerosene or gasoline lantern may be utilized. A fire extinguisher capable of extinguishing a gasoline or oil fire should be held in readiness.

2. Pour hot oil into the oil-filler tube. This will thaw the oil in the crankcase.

3. If the prevailing temperatures are not below -10° Fahrenheit, replenish the crankcase with an engine oil having a viscosity of SAE 10. However, if night and day temperatures vary above and below -10° Fahrenheit, SAE 10 engine oil (detergent type) may be used.

4. Under conditions of sustained, extremely low temperatures (lower than -30° F) it may be necessary to dilute SAE 10 engine oil (detergent type). If ordinary engine oil is used, the crankcase oil should be diluted prior to cranking, with the following materials according to their availability and with preference given in the order named:

a. 1 quart of gasoline to every 5 quarts of engine oil.
b. 1 quart of kerosene to every 5 quarts of engine oil.
c. 1 quart of distillate to every 4 quarts of engine oil.

When crankcase oils are first diluted, the engine must be turned over several times to mix the oil and the diluting agent thoroughly. Dilution of engine oils will increase oil consumption, and thereby necessitate more frequent checking of the oil level.

Low temperature, arctic-viscosity type greases must replace heavy greases which were applied when temperatures were above freezing. The heavier greases, suitable in higher temperatures, will solidify. It may be necessary to replace sealed ball and roller bearings with bearings which have been packed with special low-temperature lubricants.

Grease, general purpose No. 1 or No. 0, may be used in temperatures between +32° and +10° Fahrenheit. In temperatures of less than +10° Fahrenheit, No. 0 grease should be used to lubricate the vehicle chassis.

In temperatures colder than -40° Fahrenheit, transmission, transfer cases, and differentials should be flushed with a thin, warm flushing oil and refilled with a low-temperature, extreme-pressure lubricant which has been diluted to 10 per cent with gasoline, light oil, or kerosene in order to maintain a satisfactory operating viscosity without danger of disintegration. The lubricant in steering-gear housings should be replaced with engine oil.

It will be necessary to house the vehicle in a warm enclosure for a minimum period of three hours prior to attempting lubrication. This will permit frosted metal fittings and grease passages to thaw.

Extremely low, sustained temperatures necessitate the addition of diacetone alcohol to dilute the supply of brake fluid and shock absorber fluid. A mixture of 20 per cent castor oil and 80 per cent diacetone alcohol is considered effective as a replacement for the standard brake and shock absorber fluids.

Carburetion, Compression, and Ignition

A gasoline engine can be cranked mechanically at temperatures as low as -30° Fahrenheit. Ease of starting, however, depends upon proper lubrication and good cylinder compression to create heat of vaporization for the gasoline, together with a strong battery and good ignition. For temperatures as low as this it may be necessary to apply heat to the intake manifold, either by means of a warm enclosure or by careful use of a blow torch played over the intake manifold. Fire extinguishers must be available. Before making the attempt, see that everything is in readiness so that the engine will start on the first trial. Avoid letting the engine fire a few times and then stop. Inasmuch as water is one of the products of gasoline combustion, it is likely that such starting of a cold engine will cause this water to form a frost which will prevent further combustion

until the engine is heated to a temperature above the freezing point (+32° F.). Prolonged efforts to start the engine will wear down the battery. The following procedure should be used in starting and warming an engine during extremely cold weather:

1. Blanket or hood the front of the radiator.

2. Disengage the clutch, draw out the choke button all the way, and crank the engine by hand a few turns before turning on the switch; this breaks the stiffness of the lubricant and draws raw gasoline into the cylinder and compresses it. In a cold engine, only the lightest components of a high quality gasoline will vaporize. For this reason, a very rich mixture is necessary.

3. With the choke pulled out all the way and the clutch disengaged, start the engine by hand cranking; then gradually push the choke in as the engine warms so that raw gasoline will not flood the cylinders and destroy cylinder compression by washing the oil seal between pistons and cylinder walls. When attempting a start, turn the engine over by hand as rapidly as possible. All engines have a critical cranking speed, that is, the minimum number of revolutions per minute at which an engine must be turned before any fuel will be drawn into the cylinders for compression and ignition. This critical cranking speed varies from 40 to 70 R.P.M. Below this speed, the fuel pump and carburetor will not deliver sufficient gasoline to all cylinders. The clutch should remain depressed until the engine has warmed to normal operating temperature. Although small engines can usually be turned over by hand, it will be necessary to tow the larger vehicles to start them. In such cases, before the towing starts, the vehicle should be put in high gear with clutch disengaged. After the vehicle is in motion, the clutch should be engaged.

4. An engine, operating at a temperature below its normal heat of 140 - 170 degrees Fahrenheit, wears out approximately eight times as fast as one operating under nor-

mal conditions. Therefore, an engine must be warmed before the vehicle is set in motion with its load. The warm-up period must never be shortened by acceleration of a cold engine.

5. Engines should never be operated within enclosures because of the danger that the personnel might be overcome by carbon monoxide gas.

6. When stopping the engine for a halt, it is good practice to increase the speed of the vehicle before turning off the ignition. The ignition should then be turned off, and the throttle released at the same time. As the vehicle coasts to a halt, in gear and with clutch engaged, the engine will blow out all residual products of combustion, including water vapor, and leave only air and gasoline vapor in the cylinders.

Fuel and Air Systems

As the temperature drops, air contracts and becomes denser, thereby having less capacity for carrying moisture. Precipitation of water thus occurs. When the temperature falls below freezing (+32° F.), the moisture in the contracting air within compressor systems and partially filled fuel tanks precipitates and forms ice throughout the systems, blocking off or splitting the small feed lines. Because of this, air compressor systems become unreliable in cold climates. Compressed air tanks must be drained immediately after use. A small amount of alcohol may be added to the air and gasoline tanks to absorb precipitation and prevent freezing.

Brakes, whether air or hydraulic, should not be set during a halt. Moisture on the brake linkage or shoes might cause the shoes to freeze to the drums. Park the vehicle in gear and block the wheels, if necessary, during halts.

The following precautions should be followed to keep water out of fuel tanks:

1. Strain the gasoline through a suitable strainer to remove water. To reduce the fire hazard of this operation a positive, metallic contact must be provided between fuel

container and gasoline tank, unless both fuel tank and container are independently grounded.

2. Keep the fuel tank as full as possible. This will reduce condensation of water from the free air space above the fuel.

3. Add ½ pint of denatured alcohol to a tank of gasoline. The alcohol will absorb the water and prevent it from freezing.

4. Do not store fuel in old drums unless they have been thoroughly cleaned.

5. Never pump fuel drums dry when filling vehicle fuel tanks; allow about four inches of fuel to remain. This residue can later be transferred to a settling tank. Except in emergencies, do not pump fuel from drum to vehicle until the fuel has settled for 16 hours after filling or moving. Keep portable fuel pumps clean and protected from snow and frost.

6. When a drum has been opened, be sure that the opening is covered or the bung replaced to prevent the entrance of snow or frost. Store drums in a covered building or cover them with a tarpaulin.

Storage Batteries

The efficiency of batteries decreases rapidly with decreasing temperatures, and batteries become practically inoperative at or below -40° Fahrenheit. Do not attempt to use the battery to crank an engine which has been recently exposed to temperatures below -30° Fahrenheit, since the large amount of current consumed will rapidly drain the battery of its charge. Keep batteries fully charged, with the hydrometer reading (specific gravity) between 1.275 and 1.300. A fully charged battery will not freeze at temperatures above -85° Fahrenheit. A discharged battery (s.g. 1.100) will freeze at +6° Fahrenheit. A half-charged

battery (s.g. 1.200) will freeze at -35° Fahrenheit. To prevent batteries from discharging entirely and freezing during extreme cold, the following precautions should be taken:

1. The charging rate of generators must be increased.

2. Brushes, commutators, and bearings on both generators and starting motors must be checked for cleanliness and security.

3. After water is added to a battery, the engine should be run for one hour to ensure that the water mixes thoroughly with the acid of the electrolite and does not lie on top of the plates and freeze. Care must be taken to keep the vents in the cell filler plugs of the batteries open and free from ice or snow.

4. According to reports from the Russian front, replacement batteries must have a minimum specific gravity of 1.224 in order to ensure against freezing.

Personnel and Supplies

Freezing and thawing affect not only the motor vehicles but also the personnel. Men must be warmly dressed and they must adjust themselves to the encumbrance of heavy mittens, coats, and shoes. Metal seats of vehicles should be insulated so they will not transmit cold to the occupants. Cabs should be insulated and provided with heaters for the comfort of the driver. Windshields must be provided with defrosters to allow visibility. Exhaust manifolds, exhaust pipes, and mufflers must be kept tight and frequently checked to ensure against the emission of carbon monoxide gases into closed cabs occupied by personnel. All vehicles must be provided with well-fitting covers and curtains. When men are exposed to extreme cold for prolonged periods they become drowsy and are less alert. Periods of thaw cause perspiration, resulting in wet feet and chill. Halts must be frequent to enable personnel to adjust themselves to the conditions. Direct contact of skin with frosted metals will immediately freeze the skin surface to the metals. A tarpaulin and a plentiful supply of blankets should be available to the personnel in each vehicle. Also, there

should be in each vehicle a thermos jug of hot coffee, and a small oil stove or fire pot so that chilled personnel may warm themselves during halts or breakdowns.

Prolonged exposure of unprotected eyes to the reflection of sunlight on snow will cause snow blindness. This ailment may last for several weeks after exposure. All personnel should be supplied with and required to wear dark sun or smoked-lens glasses, to prevent snow blindness. Sunburn, caused by the same glare, must also be guarded against.

Certain supplies such as canned vegetables, milk, fruit and other food supplies will be affected by extreme cold and must be carefully packed, and insulated while enroute. This type of supplies must never be allowed to remain exposed to the weather for more than very short periods of time. During continuous or extensive cold-weather operations, all such supplies must be transported in special heat-conditioned vehicles to prevent freezing.

SECTION II

EFFECTS OF BLIZZARDS AND SNOWSTORMS

Visibility and Maintenance of Direction

During operations in extreme cold winter, blizzards and snowstorms are a frequent occurrence, especially in open, relatively flat terrain. The situation created is similar, except for temparture, to that of a desert during a sandstorm. Visibility is poor, and such of the snow-covered terrain which can be seen is barren of landmarks which otherwise would aid in maintaining direction. Poor visibility precludes greater speeds than 10 miles per hour. The column must be closed up to prevent individual vehicles from becoming lost. Numerous halts will be necessary to remove snow and ice packed on windshields, wheels, bogies, and fenders. Time schedules of operation cannot be followed.

The necessity for increased driving vigilance in order to maintain direction will cause drivers to tire quickly. This necessitates an adequate supply of relief drivers.

Whenever a vehicle pulls over, because of breakdown, the vehicle following will also halt. The "buddy system" must be adhered to so that personnel of the stranded vehicle will have sufficient assistance and will not freeze or, by straying from their vehicle, become lost in the blizzard.

An advance party must precede the column to break trail. The leading vehicle should contain a pushing detail and such details should be rotated among the personnel of the column to prevent exhaustion of any particular group.

Extreme storms will necessitate halting of the column until the blizzard subsides. Complete lack of visibility, loss of route, or snow melting on the engine and short-circuiting ignition systems, will often prohibit further operations.

Route Obliteration and Blocking of Roads

It is almost impossible to determine the location of roadbeds beneath deep snow unless the advance party has placed long stakes along the edge of the road prior to the storm. Road guides should be located at curves, guard rails, culverts, headwalls, narrow shoulders, and other hazards.

Snowstorms and blizzards not only retard a column's advance during the period of the storm, but may cause motor vehicles to become stranded indefinitely if the proper snow removal equipment is not available to open the route. All regiments operating under such conditions should be equipped with snowplows. Two types of snowplow are considered effective for rapid snow removal:

1. The light, V-type plow, with wings, can be installed on either the standard Army 2½-ton, 6 x 6 truck or the 1½-ton, 4 x 4 truck, provided the truck has plow frames attached.

2. The heavy "sno-go," or rotary-type plow is capable of eating its way through a 10-foot snowdrift.

A light truck with a long wheel base is not well adapted to use with snowplows because of the strain placed on the frames of vehicles doing this work. Therefore, it is believed that the Army 1½-ton 4 x 4 truck, loaded with ballast (preferably sand mixed with calcium chloride to prevent freezing) is better adapted to snow removal than the 2½-ton

6 x 6, which has a longer wheel base. It is desirable that each battalion of an independent regiment operating in cold climates be equipped with at least one of the V-type plows for operation on their 1½-ton or 2½-ton trucks. A 4-ton wrecker equipped with the "sno-go," or rotary plow, would greatly reinforce this other snow-removal equipment. Snowplow frames and hoists should be mounted on trucks prior to a motor march in cold climates. Snowplow shoes and cutting edges wear out rapidly with use. An ample reserve supply of these items must be maintained. A set of tire chains is needed for all wheels on vehicles used in snow removal.

The common mechanical failures on vehicles performing snow-removal work under extreme conditions are:

1. Burned-out clutches.
2. Broken tire chains.
3. Broken axles.
4. Burned-out connecting rod bearings, caused by strain in operation.
5. Worn or broken plow shoes, cutting edges, plow push-arms.

Snow removal and other heavy snow operations will cause three to four times the normal fuel consumption. Supply plans for the unit must take this into consideration.

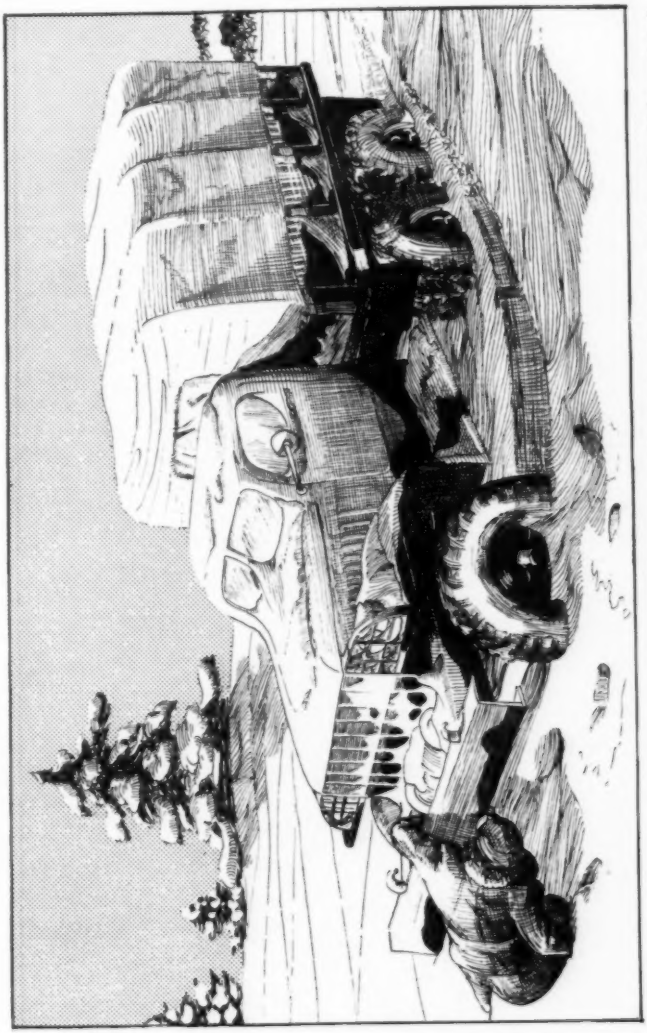
SECTION III

EFFECTS OF SNOW AND ICE

Traction

The traction secured by the driving wheels of motor vehicles is greatly reduced when operating in snow. Traction is reduced to a minimum on smooth ice or on packed snow which has thawed slightly and then refrozen. Under such conditions the following operative precautions are necessary:

1. The front wheel drive system must be kept engaged to increase steering control.
2. Only higher gears should be used for starting. This will eliminate much wheel-spinning. Braking, clutching, and throttling the engine must be done very carefully and gradually.



When camouflaging vehicles for operation in snow-covered terrain, the upper portions should be painted white to blend with the snow, and the lower portions should be painted black to break up the outline of the shadow of the vehicle.

FIGURE 5.

3. Relatively long distances should be maintained between vehicles in a column to ensure against vehicles sliding and skidding into each other.

4. The best devices to increase traction are the regular, snow-grip tires, either nondirectional or chevron type, and the standard, steel wheel-chains. For best results on dual wheels, it is recommended that the dual-type chain (each chain unit enveloping both wheels of a dual) be used. This type is used almost exclusively on dual wheels for highway snow-removal equipment. When installing tire chains, care should be taken to ensure that they are not put on backwards with the tractional cross links upside down and cutting against the rubber of the tires. Chains should always be relatively loose in order to distribute the chain stress over the entire tire area. Tire chains not only will wear out rapidly, but they also have a tendency to unbalance the wheels; therefore, they should be removed as soon as the need for them no longer exists.

5. If tire chains are not available, partial deflation of the tires will increase surface contact, and thereby provide additional traction.

Snow Camouflage

The Russian Army, while operating over snow-covered terrain, successfully camouflaged their vehicles by painting them white to eliminate contrasts of color. By painting the lower portions of the vehicle black, the outline of the shadow of the vehicle will be broken up and less easily identified by ground and aerial observers. In the choice of paints for this purpose, an attempt should be made to get a paint that can easily be applied and washed off without injury to the permanent finish of the vehicle. A good quality of water paint, free from luster, is desirable. In all cases, it is necessary that all parts of the vehicle, including wheels, rims, and tires, be covered in order to effect adequate snow camouflage. (See figure 5)

CHAPTER 2

Preparation and Conduct of Field Exercises for Small Units

Definition from FM 21-5, par. 105*h*:

"*Field exercises* are exercises conducted in the field under simulated war conditions in which troops and armament of one side are actually present in whole or in part, while those of the other side are imaginary or outlined."

Field exercises are valuable not only as a means of instruction, but also as a means of testing the effectiveness of the combat training which the unit has received. Careful observation will disclose the existence of any deficiencies which must be eliminated by further training. Field exercises lead logically to field maneuvers, with troops present on both sides. They can be presented with the minimum of equipment and troops, and on almost any type of terrain.

A field exercise must have a specific training objective which has been determined prior to the preparation of the exercise itself. The exercise must be in keeping with the degree of training of the unit.

Field exercises are of two basic types; decision and execution. If the exercise is to be one of decision, the solver must decide what he wants his troops to do. If the exercise is to be one of execution, the basic tactical decision is made by the author of the problem, and the exercise will involve the actions of the participating troops and their leaders in the issuance and execution of orders based on this decision. These two types of exercise can be combined to form a third type; an exercise of decision and execution, wherein the leader of the participating troops makes the principal tactical decision, and then leads his unit in the execution of his own plan.

Such parts of field manuals as pertain to the unit for which the problem is written, should be consulted by the officer preparing the problem. The directives for tactical training found in the Appendices of Field Manuals 7-10, 7-15, 7-20, and 7-35 will be found to be of particular value.

Let us consider the development of a field exercise from the time it is first ordered until it is terminated by means of the final critique.

THE DIRECTIVE

The field exercise is usually initiated by a directive from higher authority. Upon receipt of the directive, it must be studied carefully to determine exactly what is required. At times the directive may answer all of the following questions relative to the exercise:

1. What phase of combat is to be tested—attack, defense, delaying action, etc.?
2. Is the exercise to test decision, execution, or both?
3. For what size unit is the exercise to be drawn?
4. What tactical principles are to be illustrated?
5. When is the exercise to be held?
6. What is to be the duration of the exercise?
7. What terrain is available for the conduct of the exercise?
8. What troops and materials are available to outline the enemy and control the exercise?

Frequently, however, the directive from higher headquarters will merely require that a field exercise for a unit of stated size be conducted between specified hours on a given date, and make a certain training area available for the purpose. If the directive omits the answers to any of the above questions, the officer preparing the exercise should determine them for himself before starting further preparations. Each of these points is so important that any work done before establishing them is very likely to be wasted.

PLANNING THE EXERCISE

The preparation of the situations to be presented in the exercise is the next step. A preliminary study and reconnaissance to select the terrain should be made before the situation is developed in any detail.

Consideration should be given to the availability of maps. Either a map or a sketch should be provided to save time and facilitate understanding the problem. If a map is to be used, the one with the largest scale should be adopted. If a photomap is to be used, it should be the latest edition. In most field exercises for small units, more realistic training will result if sketches are used instead of maps, because commanders of units the size of a squad or platoon seldom have detailed maps in actual combat.

Decision must be made as to how the tactical principles which are to be exemplified by the exercise can best be illustrated on the terrain which has been selected. Based on this decision, the tactical plan of the exercise is determined and the exercise divided into phases, each designed to illustrate a definite tactical principle. The phases must be coordinated so that each successive phase will be a logical development of the action of the preceding phase. A limit must be placed on each phase of action and decision must be made as to what actions of our troops and of the enemy troops are required to complete that phase.

The actual enemy locations must be definitely established on the ground for each phase of the exercise. A small group of enemy appearing in an incorrect location might necessitate a change in the execution of the problem. Therefore, enemy personnel must appear only in previously designated places and at the proper times. The fire of the enemy must be prescribed and closely controlled, and be appropriate to the size of the unit represented. This will insure economical use of the ammunition allotted for the exercise, and prevent miscellaneous firing which might divert the exercise from the course originally planned. Enemy movements must be made under simulated combat conditions. Full use of cover

and concealment by the enemy is essential in order that their appearance in a new location will effect surprise and thereby increase the realism of the exercise.

The location, fire, and movements of any imaginary troops supporting the unit being tested must be decided upon and clearly stated in messages or orders to the unit leader.

The initial location of the participating unit must be established. This location should have the characteristics of a similar location under combat conditions. If it is an assembly area, as in an attack situation, it should be defiladed from fire and concealed from air and ground observation; it should be located so as to be convenient to favorable routes of advance to combat positions. Each of the above points should be decided upon, at least tentatively, before any work is done on the actual drafting of the situation. Notes entered on the sketch or map of the terrain while on reconnaissance will prove of value in the preparation of the exercise.

The outline of the situation, and any rough sketch of the terrain to be used as a situation map, should always be prepared on the ground. Thus, errors in the problem as related to the terrain are more easily avoided. The rough sketch and situation can be polished and improved later. At this point it is well to check on the plans made thus far to be sure that they are sound. With the notes and sketch (or map) in hand, these questions should be asked about the exercise as planned:

1. Is the exercise tactically sound? Each unit being tested should have a logical mission assigned to it. The frontage assigned should be of a size suitable for the unit involved and the assumed tactical situation. Enemy dispositions and strength should be comparable to those which would be expected under combat conditions in the stated situation.

2. Are the situations of the exercise in logical sequence?

3. Does the exercise illustrate and properly emphasize each of the tactical principles which it is designed to present?

4. Does the exercise satisfy each of the requirements of the original directive? Minor discrepancies in this respect are sometimes justifiable if properly checked and approved by the authority issuing the directive. Perhaps it is necessary that the troops move through an area which is not included in the terrain allotted for the exercise. Perhaps the imaginary enemy cannot be represented adequately by the materials allotted for this purpose. In such cases, permission must be obtained to deviate from the directive. In most instances, however, careful planning of the exercise will make such requests unnecessary.

DRAFT OF THE SITUATIONS

The initial situation of the exercise must be so drawn that its logical solution will promptly initiate the exercise along the desired lines. It must insure the development of the exercise along lines which will present a correct illustration of the tactical principles it is designed to teach. It must be reasonable and as brief and simple as possible, yet include all matters necessary to the accurate solution of the problem. The size and disposition of all troops known to be involved must be stated. A brief summary of events leading up to the present situation must be given, and the present situation as it would logically be known under combat conditions should be clearly stated. Each of the points that concern the enemy should be given first; then those that pertain to our own troops.

The initial situation should assign the unit being tested a definite mission in the midst of a clearly defined combat phase. The situation should *not* conclude with a formal requirement, as in a map problem or a terrain exercise. It should conclude with a message, an order, or a statement of a particular enemy threat, which will force the commander of the unit executing the exercise to make a decision, to execute a decision which has been made, or to do both.

Upon completion of the draft, the situations should be carefully reviewed to determine whether they are complete, logical, and tactically sound, and whether solutions other

than those contemplated are justified in each of the situations, as presented. If solutions other than the one intended can be justified, the situation must be modified or otherwise clarified or adjusted. Logical and smooth transition to succeeding situations must also be insured. Care should be taken that each solution involves the application of the principles the exercise was designed to emphasize.

After review by the officer in charge of the exercise, the draft should be reviewed again by an officer who is entirely unfamiliar with the problem. The author, in writing the problem, may have become so familiar with it as to fail to notice some ambiguity in what he has written. Review by someone who is totally unfamiliar with the problem is the only way of being sure that the men being tested will get a clear picture of the situation from what has been written. Likewise, a solution by another officer will indicate whether or not the exercise can be solved correctly in a manner other than the one anticipated.

UMPIRES' CHECK LISTS

The series of situations and expected solutions of the exercise having been completed and reviewed, umpires' check lists must now be prepared. These lists will note the points for which each umpire is to be most watchful. They should contain questions relative to the exercise, and provide space for the umpire's answers regarding the unit he is judging. The questions should be drawn in such a manner that their answers will cover the points which the exercise is intended to emphasize. The umpires should be given their check lists for study a few days before the beginning of the exercise. As the exercise proceeds, the umpire should make notes of the unit's actions in preparation for filling in the check list. The completed check list will serve later as an outline for remarks to be made at the critique.

CONTROL

The next problem is one of administration, or how to control the exercise when it is presented. To what extent will the enemy be purely imaginary? If the parts of the enemy position not actually occupied are to be marked, how shall they be indicated? Who will set up the markers? How many umpires will be needed? Where will they be assigned, and who will act in this capacity? What equipment will be required? Who will be charged with the responsibility of assembling and placing the equipment (telephones, blank ammunition, flags, and so on) where it will be needed?

Control points must be selected. The term "control point" sounds more imposing than the locality itself needs to be. A control point, as used in small-unit exercises, consists of no more than a specific locality from which some direct means of communication between control units is available. Consider the case of the enemy umpire who will be unable to see certain parts of the unit being tested when they arrive at a certain locality, yet must time some enemy action to coincide with the unit's arrival at that locality. He might instruct another umpire, "When your troops reach the edge of the woods, have your messenger go to Point Y and signal to me. That will be the signal for the enemy detail to move from the ridge to the north." In this case, Point Y is a control point. A control point might contain a field telephone installation, or provide messenger service. Or it might, as in the example stated, be merely a locality suitable for transmitting visual signals.

Telephones installed at control points will facilitate control of the exercise, but are not essential. The initial location of the unit and the point where the unit commander receives his initial instructions and orders are the two basic control points, hence should be most closely coordinated. All control points selected should be easily found by those who are to use them and should be located near enough to the unit to allow their being reached quickly when they are needed.

The enemy should be represented by at least a few troops, although it may be necessary to supplement them with flags.

Flags or placards used alone to indicate the enemy provide no realism, and for this reason are usually unsatisfactory. Blank ammunition should be used if available. Charges of explosives set off in accordance with a prearranged schedule will add battle realism to the exercise.

If the exercise is for a unit no larger than a company, the equipment necessary for control can usually be obtained in any infantry battalion. For an exercise of this size, no elaborate umpire system is required; the necessary communication system is not extensive; the enemy can be indicated by improvised flags or placards, and a very small number of men.

UMPIRES

Umpires selected for the close control of the exercise should be officers or experienced non-commissioned officers. Seven umpires are usually sufficient for a rifle company exercise. These seven are usually a chief umpire, who is in complete charge of the exercise and moves with the company commander, an assistant to the chief umpire, an umpire with the enemy, and one umpire to accompany each of the platoons. One messenger for use by each umpire is desirable.

The assistant umpires usually are primarily concerned with technical matters, such as observation of safety precautions, keeping units within the prescribed area, and technique of fire.

With the exception of the chief umpire, the enemy umpire is the most important umpire of the group. His location enables him to report from the point of view of the enemy on the activities of the unit being tested. Of all the umpires, he is in the best position to evaluate the use of cover and concealment by individual men, or the use of covered routes of approach by the unit.

This same person may also be placed in command of the enemy detail. Proper control of this detail is vital to the success of the exercise. An able commander of the enemy

detail can make possible the use of fewer men on this assignment. Prompt movement of small groups from one enemy position to another by concealed routes will enable a small number of men to represent a larger number of the enemy.

All officers and enlisted men who are to act in a control capacity during the exercise must be thoroughly familiar with the exercise itself. The instruction of the control personnel may very well be in the form of a tactical walk. Thus the group becomes thoroughly familiar with the terrain and the problem; furthermore, the officer in charge of the exercise is provided with an additional check on the suitability of the exercise. If the exercise as prepared contains any grave errors, they will usually come to light during this tactical walk.

Control may be exercised by means of verbal instructions issued by the umpires or by the use of flags to indicate specific situations. If flags are used, their use should conform to FM 105-5, Umpire Manual. This manual describes the exact meaning of umpires' flags of certain types and colors. Strict adherence to these meanings in small-unit exercises is necessary to avoid confusion in larger-unit exercises and maneuvers which will follow in the training cycle. If flags are used, everyone taking part in the exercise must be thoroughly familiar with the meaning of each flag.

Umpires should not be selected from the unit participating in the exercise. That unit should start the exercise with its full complement of men. Verbal instructions by umpires should be carefully worded to give the troop leaders full liberty in determining their actions. An umpire's announcement, "The enemy is withdrawing" has little value. The correct method of presenting such a situation would be: "Squad leader, you see a small group of enemy withdrawing into those woods. There is another small group withdrawing from that hillside." The leader is thus given the opportunity of deciding if this is a general withdrawal or merely the maneuvering of small enemy units. Likewise an umpire's statement that the enemy has "fire superiority"

is of small value. He should state what kind of fire is falling, the amount, where it is falling, and where it appears to be originating. Umpire's instructions should present situations comparable to those which would be met in combat. The deductions from those situations should be made by the leaders of the participating units. (See par. 3*c*, Appendix II, FM 7-10.)

Umpires should provide only such enemy information as the efforts of the commander of the unit being tested would logically obtain during combat. For example, information which could be obtained only by reconnaissance should not be furnished unless the reconnaissance has been made.

Umpires can enforce the proper use of cover by declaring as casualties those men who fail to take proper cover. The umpire can also force the exercise into proper channels by suddenly creating a special situation preventing any proposed action which would spoil the exercise. If the leader of a unit is about to move his troops to an area which would divert the exercise from its planned course, the umpire can announce, "Heavy artillery fire is falling in that area," or, "Reports from nearby troops indicate that there are large enemy patrols throughout that area." Such situations would be quite normal in war. The alternative to this means of control is the blunt announcement that such action will spoil the exercise. However, the minds of all who hear such an announcement are immediately focused on the fact that this is only an exercise, and the effect of carefully simulated combat conditions is thus reduced.

The umpire's task is not an easy one. It requires knowledge of all phases of combat which would be encountered by a unit the size of the one he is judging. It also requires special training in the duties of an umpire. He must be tireless and alert. He must show sound tactical judgment and understand the effect of the fire of all weapons introduced in the exercise. As the troops approach the enemy, the umpire must be particularly careful that he does not interfere with the movement. He should detach himself from the unit, and keep himself concealed from the opposing forces in order to avoid giving away his unit's location.

Thorough analysis of the qualifications and training of umpires cannot be included here. However, umpires for the exercise must be carefully chosen from among the available personnel. The more training and experience they have had in umpiring, the more benefit will be derived from the exercise, and the more smoothly it will progress.

CONDUCT OF THE EXERCISE

In presenting the exercise to the participating unit, it should be emphasized that instruction is the basic purpose. Dispel all ideas that might exist that it is desired to "show someone up." The field exercise is an ideal method of learning and profiting from one's errors. These errors will show up quite readily, and should be used as a basis for discussion and further training. If anyone participating in the exercise fears the result of his errors, he will have a tendency to be more conservative in his actions and will not display the initiative and resourcefulness that must characterize all leaders. One means of dispelling such ideas is to give ample advance notice of the time, place, and general nature of the exercise, and to provide study references. This will permit thorough study of the subject before the exercise is begun and will also make for better understanding and performance.

The commander of the unit being tested should be given instructions as early as possible as to when and where the unit is to report, the prescribed uniform and equipment, when and where the commander is to report, and the personnel who should accompany him. The time and place of the critique, and who will attend should be announced in advance.

The detail representing the enemy should be moved into positions previous to the arrival of the unit to be tested. Thus, their exact locations and strength will be unknown, and combat conditions will be more accurately simulated.

When the unit being tested arrives at the assembly position, only the situation as it would be known under actual combat conditions should be announced. This initial conference will also provide an opportunity for a member of the control group to review for the troops the meanings of the flags and signals to be used for controlling the exercise.

While this conference is being held, the commander of the unit should report to the chief umpire for instructions. He should have with him the personnel and means of communication or other equipment he was previously instructed to bring to this meeting. Thus the exercise is commenced with a situation comparable to the combat situation wherein the unit commander has left his troops in an assembly area under the control of a subordinate, while he has gone forward to receive orders from his next superior commander.

The chief umpire should explain to the unit commander that the exercise is about to begin and that as soon as the situation is presented to him, he will be "on his own." If there are any last minute questions, they should be asked at this time. The chief umpire then checks with the other umpires to be sure they are ready for the exercise to begin, and presents the first situation to the unit commander.

During the exercise, umpires should carefully check all actions and orders of the units to which they are assigned. Should a leader indicate that he is about to take an unsound action, or one which will seriously affect the exercise, the umpire should intervene by presenting a tactical situation which will prevent the erroneous action; or he may ask questions of the leader or call his attention to some point or situation which has been overlooked. Umpires should guard against too much conversation with individual leaders, however, as this would prevent the leader's concentration on the problem itself. Minor mistakes or errors in technique should be corrected by umpires as they occur and should not be noted for mention at the critique.

The conduct of the exercise is coordinated by contact between umpires, and the use of the previously designated control points.

THE CRITIQUE

When the exercise has progressed to its conclusion, or has reached a stage where no further benefit can be derived, the chief umpire should notify the unit commander and have the troops assembled for the critique.

The definition of *critique* is, "a careful and thorough analysis of any subject." The critique of the exercise should be kept within this definition.

The critique of all small-unit field exercises should be conducted at a location from which the terrain on which the exercise was held can be seen. It should be restricted to the major principles which the exercise was designed to exemplify and should be definitely limited as to time. Both the good and bad points of the exercise should be discussed. Critiques must be of a nature that will neither cause the men to lose confidence in their leaders, nor cause the leaders to lose self-confidence. Often it may be desirable to conduct two critiques, the first to include all men participating in the exercise, and the second to include only the officers.

At the beginning of the critique, the chief umpire should outline briefly the purpose of the exercise, the initial situation, and the developments of the exercise as it progressed. Actions which were well carried out should be freely praised. Likewise, those which were poorly executed should be criticised, avoiding unnecessary identification of individuals or specific units. Discussion of the exercise should be specific. Each tactical principle which was well carried out, or which was violated, should be stated. The umpire's favorable or unfavorable comments should be supported by reference to specific actions of the unit. When a tactical error is pointed out, the probable consequences of such an error in combat should be explained and a better method suggested. Everyone concerned should be allowed to ask pertinent questions and discussion should be encouraged. The chief umpire should control the discussion to prevent its becoming personal, and to prevent bickering about minor points.

Each umpire should be called upon for comments relative to the particular unit which he covered. The same care in control of these discussions should be maintained as in the discussion of the exercise as a whole. Here again, everyone concerned should be allowed to ask questions freely, and a purely impersonal discussion should ensue.

SUMMARY

1. Field exercises are particularly applicable to the training of small units, because they can be staged with the minimum of personnel and equipment, and on limited terrain.

2. Every field exercise should be designed to accomplish a particular training objective and should illustrate specified tactical principles.

3. The field exercise should be prepared, conducted, and critiqued with a view to securing the maximum training and testing benefits.

4. Basic considerations in the preparation and control of field exercises are—the directive, the preparation of the situation, administrative details, conduct of the exercise, and the critique.

5. The situation should be drawn to illustrate the principles it is desired to cover, and to fit the exercise to the size and state of training of the unit involved and the terrain available.

6. Careful arrangements must be made for the control of the exercise, with special attention being given to the instruction of umpires and other control personnel.

7. The exercise should close with a critique, in which shortcomings and efficient performances are discussed, and the major tactical principles which the exercise was designed to exemplify are emphasized.

8. The critique should be conducted on the terrain; it should be definitely limited as to time; personalities should be avoided.

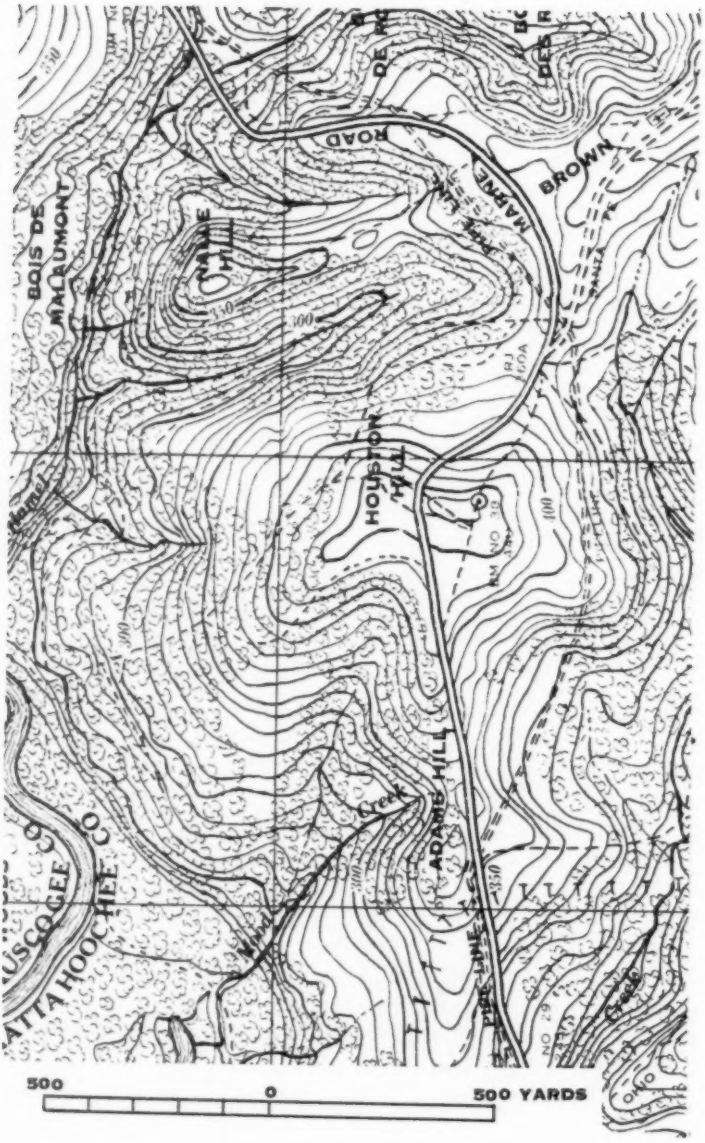
MAP EXERCISE
PREPARATION OF TACTICAL PROBLEMS FOR SMALL UNITS

1. You have recently assumed command of a battalion of the .....th Infantry. Its officers and noncommissioned officers are fairly well trained in the tactical employment of their units, and all of the privates have completed their training in basic and technical subjects. Tactical training has progressed through platoon and some company field exercises. In accordance with the regimental training program, you are to initiate battalion field exercises in the near future.

2. You have decided to use the period 1430 to 1730, next Tuesday, for a tactical exercise, under your control, for the purpose of testing the tactical training of Company E, and the tactical knowledge and ability of its leaders. It will therefore be a problem requiring both decision and execution.

3. The terrain indicated on Map A (Fig. 6) is available. One noncommissioned officer and eight privates from the Battalion Headquarters Company will be available to represent the enemy. Checkered flags are available to represent small-arms fire; red and white for enemy fire, blue and white for the attacking force. Assorted ground signals are available. Two radio sets, SCR 536, will be available for use by umpires.

4. You have determined that the exercise will consist of *two* phases; the first to involve the use of Company E, as battalion reserve, to attack through a gap in the line to overcome the resistance holding up the remainder of the battalion, and the second to involve reorganization of that company and its resumption of the attack as part of the attacking echelon of the battalion. It will be assumed that the battalion is an interior one. The gap may be within the battalion or on either of its flanks.


ROAD
MAPLE LANE
BROWN
BOIS DE MALUMONT
HOUSTON HILL
ADAMS HILL
ATTAHOOCHEE CO
500
0
500 YARDS

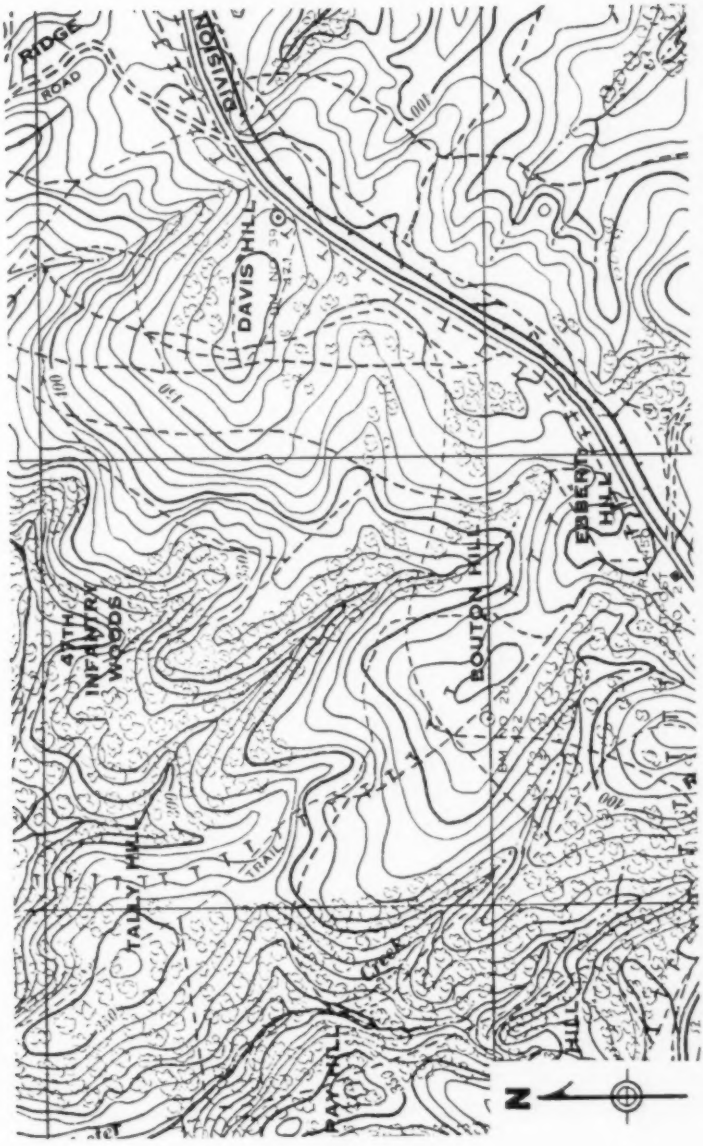


FIGURE 6.—Map A.

5. Based on a map reconnaissance, you have made the following additional decisions:

a. The general direction of attack of the battalion will be from west to east.

b. The company commander will be denied the use of a map or photomap. He may be given a rough sketch.

c. The time allowed him for solution will be limited, thus requiring quick thinking and prompt action.

d. Thirty minutes of the three-hour period will be allotted for a critique.

e. The problem will be designed to emphasize the following tactical principles:

(1) *Units which have been stopped by enemy resistance, direct their reserves into a gap created by the advance of an adjacent unit to envelop the enemy or attack him in flank.* (FM 7-20, par. 138*c*.)

(2) *There are numerous matters which require the action of the company commander in the period between receipt of the battalion order and the time of attack. To accomplish these, economical use of the company commander's time is essential.* (FM 7-10, par. 16.)

(3) *During movement to attack positions, the company commander must maintain adequate close-in protection of his company.* (FM 7-10, par. 11*e* and 20.)

(4) *Attack through woods requires special measures to maintain direction and contact, insure security, and permit effective action against any hostile resistance which is encountered.* (FM 7-10, par. 39.)

(5) *A support platoon is generally disposed to afford protection to exposed flanks of the company.* (FM 7-10, par. 110*c*.)

(6) *A company commander must provide protection for the reorganization of his company.* (FM 7-10, par. 24.)

6. Having made these decisions, you would make a reconnaissance of the area in which the problem was to be held and prepare the situations on the ground. This is, of course,

impossible in a map problem. However, a careful study of Map A will enable you to make a satisfactory solution of the following requirement:

Requirement: Prepare the following parts of the problem:

a. An *initial situation,* including a simple sketch to be given to the company commander in lieu of a map.

b. A *battalion attack order,* or *portions thereof,* to be issued orally, which will require the company commander to make decisions and plans, and the company to execute them, as outlined for the first phase.

c. A *second situation,* based on an assumption that the attack was successful, which will require the company commander to reorganize his company and make it practicable for him to effect a complete reorganization.

d. A *subsequent order,* to be issued as a *written message* from the battalion commander, which will require the company commander promptly to redispose his company and employ it as one of the companies of the attacking echelon in the continuation of the battalion attack, as outlined for the second phase.

(Note: Omit directive, administrative details, control and conduct, etc. Assume that one radio set, SCR 536, is assigned to each lettered company and two to the Bn. C. P.)

A SOLUTION

(Note: *Each requirement is restated and followed by a solution.*)

FIRST SITUATION OR PHASE

Requirement

a. An initial situation, including a simple sketch to be given to the company commander in lieu of a map.

A Solution

See Map B, (Figure 7).

Situation: "Captain Company E, look at this sketch (Map B). We are on ADAMS HILL. That (pointing) is HOUSTON HILL and that is DAVIS HILL. That direction is north. Known enemy dispositions are as shown on the sketch.

"The 29th Infantry, an interior regiment of a larger force, has been attacking to the east, with the 1st and 2d Battalions in the attacking echelon, 1st Battalion on the right. The 8th Infantry is on the left of the 2d Battalion.

"At 1400 today the 2d Battalion, with Companies F and G in its attacking echelon, Company G on the right, was stopped on the western slope of HOUSTON HILL by small-arms fire from HOUSTON HILL. Company G's front line runs generally along that fringe of trees (pointing). Company F is north of the road and generally abreast of Company G. Scattered artillery fire is falling throughout the area.

"The machine-gun platoons of Company H are in positions on this (ADAMS) hill. The mortar platoon is in position in the woods south and southwest of here, with observation located on this hill.

"Connecting groups have been sent to both flanks of the battalion. These groups are—one-half rifle squad from your 3d platoon on the right and a squad from Company F on the left. The group to the right has reported that the leading elements of the 1st Battalion, on our right, have been stopped by fire from DAVIS HILL (pointing). The group on the left has reported that the 3d Battalion, 8th Infantry, is making slow progress toward NALLE HILL, and has advanced farther east than our Company F, and that a gap of several hundred yards exists between that battalion and Company F.

"Company E is in battalion reserve and has not been engaged today. It is in an assembly area as shown on the sketch (Figure 7)."

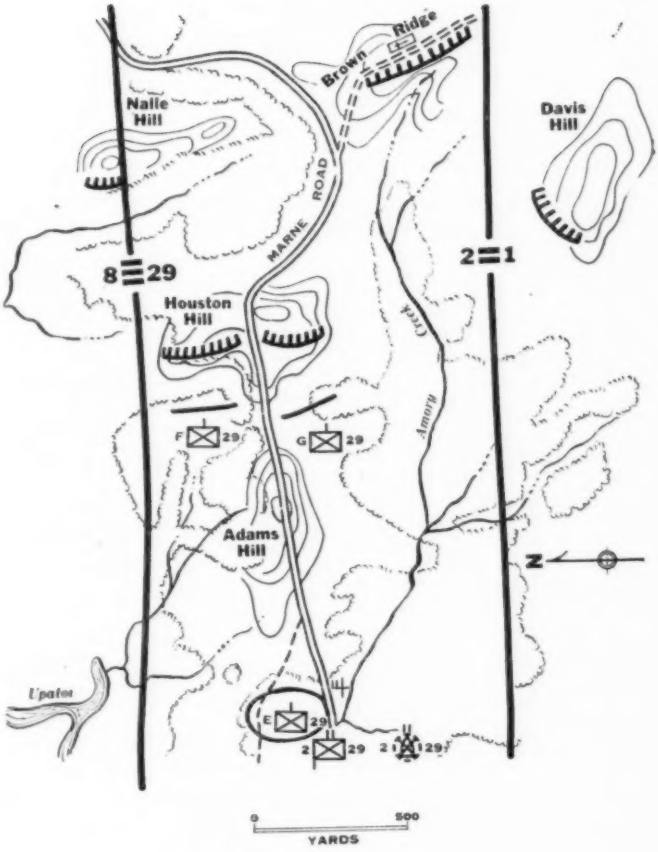


FIGURE 7.—Sketch B.

Requirement

b. A battalion attack order, or portions thereof, to be issued orally, which will require the company commander to make decisions and plans, and the company to execute them, as outlined for the first phase.

A Solution

Battalion commander's oral order. (Portions pertinent to Company E.)

"Take notes.

"You are familiar with the situation.

"This battalion will capture HOUSTON HILL and will continue the attack generally along this road (MARNE ROAD) and capture BROWN RIDGE.

"Commencing at 1545, the artillery will place concentrations on the hostile position on HOUSTON HILL. On your white star parachute signal, fired from the north slope of HOUSTON HILL, the artillery will lift to BROWN RIDGE.

"Company H will continue in support from its present positions. Its fire on HOUSTON HILL will lift to appropriate targets near the crest of that hill, or east of the crest, on your signal for the lifting of artillery fire.

"Companies F and G will resume their attack upon your white star parachute signal, and your notification by voice radio. Company F will limit its advance to 200 yards east of its present position. Company G will remain south of the MARNE ROAD.

"You will move your company (Company E) under cover north of this road, attack HOUSTON HILL from the north not later than 1600, and capture that portion of HOUSTON HILL north of MARNE ROAD. Take special precaution to protect your left flank from counterattack from the direction of NALLE HILL. Arrangements have been made with the 8th Infantry for your company to pass through the zone of action of that regiment.

"Battalion ammunition distributing point, battalion aid station, and battalion command post will be as shown on the sketch.

"Any questions?

"It is now 1445."

SECOND SITUATION OR PHASE

Requirement

c. A second situation, based on an assumption that the attack was successful, which will require the company commander to reorganize his company and make it practicable for him to effect a complete reorganization.

A Solution

As soon as Company E has captured that part of HOUSTON HILL north of MARNE ROAD, the chief umpire will stop the action and issue to Captain Company E a new situation, as follows:

"Company G successfully advanced and is now occupying that part of this hill south of MARNE ROAD. Company F did not advance beyond its original position, and is now being assembled in battalion reserve. Elements of Company H are now displacing forward to positions on this hill. One section of machine guns can be seen moving in this direction along the north side of MARNE ROAD: it is now about 400 yards west of the crest of this hill. The other elements of Company H which can be seen displacing are all moving south of MARNE ROAD toward the area occupied by Company G. During your attack, the leader of your .....platoon was killed and your communication sergeant, bugler, and orderly were wounded by shell fragments. I have already notified them that they are casualties. There were a number of other casualties among your platoons—my assistants have already tagged these men as casualties. For the last two minutes, salvos of four shells each have been bursting about halfway down the east slope of this hill every fifteen seconds; in every instance these shells have landed quite close

together. Since reaching this hill, your company has received scattered machine-gun fire from BROWN RIDGE. However, about two minutes ago, you observed smoke shells burst along the west slope of that ridge. BROWN RIDGE is now obscured by smoke and for the last minute practically no small-arms fire has fallen on your company."

Requirement

d. A subsequent order, to be issued as a *written message* from the battalion commander, which will require the company commander promptly to redispose his company and employ it as one of the companies of the attacking echelon in the continuation of the battalion attack, as outlined for the second phase.

A Solution

"To: C O Co E.

1st Bn still fighting for DAVIS HILL. 8th Inf has captured NALLE HILL and is continuing attack to the east. BROWN RIDGE must be captured before dark. Artillery fire on BROWN RIDGE will lift on call or signal from attacking companies. Continue your attack without delay and capture that part of BROWN RIDGE north of cemetery (inclusive). Notify Company G promptly of the time you expect to renew your advance from present positions; it has been directed to renew attack in conjunction with you. Acknowledge by voice radio.

Jones
Comdg. 2d Bn"

UMPIRE'S CHECK LIST

1. Arrangements made to move company promptly?.....
2. Arrangements made to get officers forward for orders?

.....

3. Was time available used to best advantage?.....
4. Personal reconnaissance of Company Commander:
   Did he go to the right places?.....
   Were proper security measures taken?.....
   Use of ground and cover.....

5. Movement of company from assembly position to attack area:

(To be checked by assistant umpire)

March discipline.....

Security measures.....

Use of scouts.....

Route: Cover?..... Obstacles?.....

Time used.....

6. Company attack order:

Proper personnel present?..... Place of issue.....

Orientation complete? .....

Was order complete?..... Use of terrain.....

Scheme of maneuver.....Adequate protection of exposed flank?.....Line of departure or area from which attack was launched..... Time of attack.....

Direction of attack..... Use of weapons platoon.....

Support .....Command Post location.....

7. Conduct of the attack.....

Use of ground and cover..... Did men bunch up?.....

Control by platoon leaders and N.C.Os.....

Maintenance of direction.....

8. Reorganization:

Upon presentation of situation, was company promptly and effectively reorganized?.....

Would the methods employed have been feasible under the assumed conditions?.....

Security measures..... Message to Battalion Commander.....

9. Second Phase:

Method of transmission of orders for continuation of the attack..... Was the plan of action logical and workable?..... Was the attack resumed without unnecessary delay?..... Were orders clear and concise?..... Were orders carried out promptly?.....

Were steps taken to notify Company G of renewal of advance?..... Use of cover by leaders and men.....

Did men bunch up?..... Control by platoon leaders and N.C.Os.....

Maintenance of direction.....

CHAPTER 3

Intelligence and Reconnaissance Platoon

IN WHICH AN ENTHUSIASTIC PLATOON LEADER DISCUSSES THE ORGANIZATION, TRAINING AND EMPLOYMENT OF HIS NEWLY ORGANIZED PLATOON.

SCENE I

Time: July.

Scene: Orderly room of regimental headquarters company. Lt. Recon, leader of the intelligence and reconnaissance platoon, and Lt. Comm, leader of the communications platoon, enter together. It is just after Retreat formation.

Lt. Recon: You're just the man I want to see, Comm. Do you have a few minutes to spare?

Lt. Comm: Of course, sit down and take it easy. I've been wanting to talk to you anyway about your new organization. I heard the old man discussing your platoon this morning. He was very enthusiastic—kept talking about the different tasks the platoon would do.

Lt. Recon: This new outfit does all the work the old intelligence platoon did, and much more.

Lt. Comm: You mean—it does more work for S-2?

Lt. Recon: The main thing my outfit does is to provide the regimental commander with an organic unit upon which he can call at any time to obtain information of the terrain and the presence, or absence, of hostile forces in the regimental zone or sector and thus supplement air reconnaissance. It works particularly in areas not quickly accessible to dismounted combat units.

Lt. Comm: Good. Heretofore we've had to improvise by taking men and trucks from other units and sending them out on reconnaissance missions. We've needed a permanent reconnaissance unit for a long time.

Lt. Recon: By means of motor patrols, or mobile outguards, the intelligence and reconnaissance platoon extends the security of the regiment. We should be of real help in increasing the time between the warning of impending action and the action itself.

Lt. Comm: I see. This will give the commander more time to decide on a plan of action and up-to-the-minute information as he executes his plan.

Lt. Recon: And that time element is important. Present-day information changes quickly. You know the old saying, "Nothing is older than yesterday's newspaper?" It's the same way with combat intelligence—we must obtain the information quickly and get it back to the commander in a hurry, or it will be useless.

Lt. Comm: The duties of your new unit are mainly reconnaissance?

Lt. Recon: Don't forget the name—intelligence and reconnaissance platoon. We still have our intelligence duties —assisting S-2 in the collection, interpretation, and dissemination of information, and executing counter-intelligence measures.

Lt. Comm: Doesn't it take a large number of men to perform all these duties?

Lt. Recon: One officer and 24 enlisted men make up the platoon. (Pause) I can see that you're surprised. The reason we can accomplish all these tasks with so few men is that we're provided organically not only with trucks but also with radio communication.

Lt. Comm: Radios, eh? You're stealing some of my thunder.

Lt. Recon: That's one of the features of our new setup. Organic motors and radio communication. And that's one of the things I wanted to talk to you about. Our new organization has three radio operators. I'd like to have them trained with your platoon.

Lt. Comm: Fine. Our radio and visual section starts training new men next week. Your operators can join this class.

Lt. Recon: Good. Another thing—when we get started on our training schedule, I'd like you to talk to my platoon about radio. Although my radio operators will be specialists, everyone in the platoon should know something about this means of communication, and at least be able to operate a 511 radio.

Lt. Comm: I'd be glad to make the talk if you'll see the old man and get his O.K. By the way, now that your platoon has speed and mobility, won't you be swamped with calls from battalion commanders with reconnaissance missions for you?

Lt. Recon: No, you see, the intelligence and reconnaissance platoon is strictly a regimental unit. We operate under direct supervision of S-2 on tasks for the regimental commander. However, the regimental commander may attach one squad of the platoon to a battalion which is providing security for the regiment.

Lt. Comm: Is your platoon often broken up that way?

Lt. Recon: No, only in situations where one of the battalions is acting as advance, flank, or rear guard of the regiment, or forms the leading echelon of the regiment in an approach march, and needs a reconnaissance element for the proper performance of its mission. Otherwise it is used as a unit. Of course, several of our men, the topographical draftsman for example, stay close to S-2. Also, in the attack as well as in the defense, some of our men are used to man forward observation posts.

Lt. Comm: I can see from what you've told me that your change from the former intelligence platoon into your new motorized outfit has brought you new duties without taking away any of the old ones.

Lt. Recon: That's right. For instance, reconnaissance squads must be trained in both mounted and dismounted patrolling, because motorization doesn't replace the need for foot patrolling.

Lt. Comm: Tell me, when they motorized you to increase your speed and mobility, did they increase your fire power to make you more aggressive?

Lt. Recon: We're provided with weapons to defend ourselves against air, ground and armored attack, but we have little offensive strength. In any case, we can't fight effectively while mounted, you know. We have to dismount and move away from the vehicles, if we must fight. But our combat action is limited to that required for self-preservation.

Lt. Comm: Then, you must avoid combat?

Lt. Recon: Yes, whenever possible. Our patrols operate by stealth or speed. When there is a mission which will probably require a lot of fighting, it should be assigned to units which have the required fire power. An element of my platoon might be attached to such a unit, however, for reconnaissance missions.

Lt. Comm: I can certainly understand your enthusiasm for your unit, Recon. It looks to me as if it has a great many advantages—speed, mobility, greater range of operations, and extension of security.

Lt. Recon: And, don't forget conservation of personnel. But, there are disadvantages to the new organization, too.

Lt. Comm: (Laughing) I'm surprised you'll admit them.

Lt. Recon: I realize our disadvantages — and limitations, too. But we hope to iron out the wrinkles by training and experience.

Lt. Comm: I think I can guess two disadvantages—your movement is generally confined to roads, and your motor patrols may be easily ambushed.

Lt. Recon: Right you are. We have to guard against being "road-bound." When conditions permit, we do leave the roads. Ambush is another constant worry. We try to protect ourselves in that respect by extending our vehicles in depth.

Lt. Comm: But, doesn't that make control more difficult?

Lt. Recon: It does, but by laying stress on that phase of our training, we can reduce that disadvantage. Good control, of course, is essential.

Lt. Comm: Another problem you have on your hands is that of supply and maintenance of vehicles. Isn't that so?

Lt. Recon: Yes, we must be able to perform first echelon maintenance on our vehicles and take care of them in the field. Repair or replacement will be difficult during combat. (Looks at watch.) Time for me to be on my way. We're having a night problem tonight in dismounted patrolling.

Lt. Comm: You've got me interested in your organization, Recon. I'd like to know more about it.

Lt. Recon: You'll have the opportunity, because much of the training of our two platoons is interrelated, and we will have to work together on it.

Lt. Comm: I'll be glad to cooperate in any way I can. Let me know when you want me to give that talk.

Lt. Recon: I will. At the same time, I'll send you a memo with some information about the personnel of the platoon.

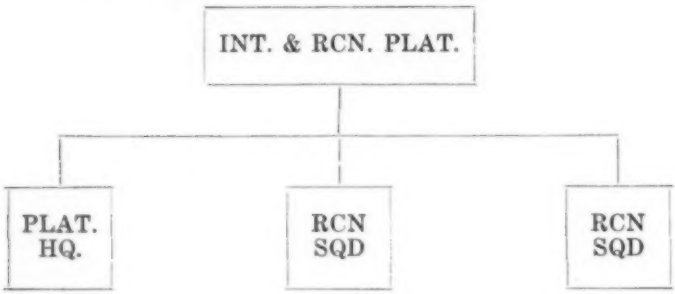
(Curtain)

Memorandum for Lt. Comm:

My three radio operators will report to you at 0730 Monday, July 6th.

The platoon studies radio communication (SCR-511 and SCR-284) Wednesday, July 15, 0900-1000 in the assembly hall. Let me know if you can talk to the platoon at that time on the use of radiotelephone and prearranged codes.

Here is the information I promised to send you:



1 1st Lt, CO-C
1 Stf Sgt, Plat-C
1 Techn-fifth, drftm, Top-R.
1 Techn, fourth, Rad Opr-R
1 Pvt, Trk Driver—R M1903
2 Pvts, Scts, Obsrs, Int-R
1 trk, ¼-ton, amphibian

1 Sgt, Sqd Ldr-R
1 Cpl, Asst Sqd Ldr-R
3 Pvts, Trk Drivers-R M1903
(a) 1 Rad Opr-R
3 Pvts, Scts, Obsrs, Int-R
3 trks, ¼-ton amphibian

(a) Techn, fifth, in one Sqd; Pvt in one Sqd.

DUTIES OF MEMBERS OF THE I. AND R. PLATOON

Platoon Headquarters

Platoon leader—Conducts tactical training and combat operations under the supervision of S-2, and carries on the administration of the platoon under the direction of the headquarters company commander.

Platoon sergeant—Assists the platoon leader, especially in the administrative work.

Topographic draftsman—Assists S-2 at the CP. Several members of the platoon should be trained in his duties, so that one member of the platoon headquarters can be on duty at the regt. CP at all times during combat.

Truck driver—Operates ¼-ton truck and performs first echelon maintenance.

Radio Operator—Maintains contact with reconnaissance squads, regt. CP, or with other elements of the regiment, as directed by the platoon leader.

The remaining men of the platoon headquarters are assigned either as scouts or are used for intelligence work at the command post.

Reconnaissance Squads

Sergeant—Squad leader.

Corporal—Assistant squad leader.

Truck drivers—Operate their ¼-ton trucks; perform first echelon maintenance.

Radio operator—Communicates by radiotelephone with platoon headquarters, or as directed.

The remaining men of the squad are assigned as scouts and observers.

Any number of seating arrangements may be used in the trucks. However, the following points should be kept in mind:

1. Space M1 and M1903 rifles throughout the column.
2. Keep the squad leader in the same truck with the radio and radio operator.

Platoon is equipped with seven ¼-ton amphibian trucks and four SCR-511 radio sets. Plat. Hq. and the two reconnaissance squads will each have one of the radio sets, and the fourth will be used for replacement or fixed observation. A more powerful radio set (such as the SCR-284), when provided by your (communication) platoon, is placed in the platoon leader's truck.

SCENE II

Time: July.

Place: Assembly hall. Lt. Recon is arranging instructional material for the conference period which is soon to begin. The platoon has not yet assembled. Lt. Comm, accompanied by three enlisted men carrying an SCR-284 radio set, enters.

Lt. Comm: Hello, Recon. I see you're ahead of time. Just set the radio on the platform, men. That will be O.K.

Enlisted Men: Yes sir. (Salute and leave.)

Lt. Recon: You came well-equipped for a lecture on radio.

Lt. Comm: S-3 suggested that I bring this SCR-284 along, since it is to be lent to your platoon anyway.

Lt. Recon: Yes, it's to be mounted in my jeep. The 30-mile range of this set will considerably extend our range of operations.

Lt. Comm: I noted in your memo that you are equipped with SCR-511's.

Lt. Recon: Yes—four of them. Three for the reconnaissance squads, one in my jeep along with the SCR-284, and the fourth to be used for replacement or fixed observation.

Lt. Comm: Those little 14-pounders are all right. They'll give you a range of 5 miles, and can be carried easily as one-man loads when you leave the vehicles.

Lt. Recon: They give us ready means of communication with the regiment and adjacent units and also within the platoon. Of course, in a rapidly moving situation, the limited range of the 511 might restrict the operation of the platoon. That's where the SCR-284 comes in.

Lt. Comm: Radio then is your primary means of communication?

Lt. Recon: Yes, we use it at all times where speed is vital unless the need for secrecy prohibits its use. Of course, most of our radio messages will be sent by code, although we are authorized to transmit in the clear. These codes are to be arranged between S-2 and myself and are to be changed often, usually daily. I haven't had much experience with codes. You can see our codes can't be complicated. How would you go about preparing one?

Lt. Comm: Well, it's a good idea to prepare a list of expressions commonly used by your platoon in making reports. Each of these expressions can be represented in the code by a group of two or three letters or numbers, or by a group of two or three words. For your purposes, it would not pay to try to provide a code equivalent for every word you might use. That would slow down your transmission of messages too much. Many of your messages will contain some matter in the clear, but if you phrase them right, they'll be just so much Greek to the enemy. You can devise simple geographical codes for sending data of that kind. The main thing is to keep your codes simple and practical. When things begin to pop hot and fast, you won't be able to work with an intricate code. And, of course, you won't depend on radio alone.

Lt. Recon: That's right. We'll use commercial telephone facilities whenever we can. Between the cars of each section, we can use flag and arm-and-hand signals during the day and flashlight signals for night patrols. The men also will be trained in the use of pyrotechnics.

Lt. Comm: And there'll be times when you'll be forced to rely on foot and motor messengers, especially for sending sketches and overlays.

Lt. Recon: We can use a jeep for that purpose when necessary, and the foot messengers will be as important as always. Despite our motors and radios, we still stress training in dismounted scouting and patrolling.

Lt. Comm: I hear the platoon arriving. That reminds me, did you receive a note this morning from S-3 in regard to a command post exercise?

Lt. Recon: Yes. He suggests that we plan our schedules so that the wire and message center sections of your platoon work with my platoon in a CPX a week from Thursday. A good idea, I think. We'll work it out together.

(Curtain)

SCENE III

Time: Late afternoon, July.

Place: Regimental training area. Lt. Recon, Lt. Comm, and a detail of enlisted men have been making preparations for the command post exercise to be held the following day.

Lt. Comm: We've located the positions for the command posts, observations posts, and have designated the enemy locations. Have you finished giving instructions to the enemy detail?

Lt. Recon: They have their complete instructions for the problem tomorrow. They know what to do and when to do it.

Lt. Comm: Fine. All the other details have been checked and arranged. When the two platoons arrive here in the morning, we'll be ready to begin.

Lt. Recon: Were you able to arrange for this combined training without disrupting your schedule?

Lt. Comm: As a matter of fact, this CPX usually occurs during the last phase of our training, but I'm glad of this chance to show my men how we function as a part of the command-staff-communications team.

Lt. Comm: By the way, when there is no CPX scheduled, what do you do with your time; spend it on scouting and patrolling?

Lt. Recon: I wish it were that simple, but our training covers a great many subjects. I'll show you a subject schedule when we get back to the Orderly Room. You'll see that it covers functions of divisional and regimental intelligence agencies, collection of information, use of the compass, map and aerial photograph reading, sketching, and conventional signs and military symbols used both by our own and hostile forces.

Lt. Comm: While you're listing, you might mention the training in the various weapons. Like mine, your platoon is equipped with the carbine, M1 rifle, M1903 rifle, and antitank grenades. I suppose members of your platoon must also have some training in demolitions, booby traps, bridge capacities, and other pioneer specialties, if they are to function efficiently.

Lt. Recon: That's right. Of course, we emphasize dismounted scouting and patrolling and motorized patrolling, and also cover military intelligence, counterintelligence, and camouflage, as well as signal communication.

Lt. Comm: If we've finished here, we might as well start back. (Aside) Sergeant.

Sergeant: Yes sir.

Lt. Comm: As soon as your men have gathered together the equipment they brought up here, you can start back to the company area.

Sergeant: Yes, sir. (Salutes and leaves.)

Lt. Recon: Let's drive over to the range office. I want to get some blue and red flags for the exercise. (Lts. Recon and Comm get in the ¼-ton truck and drive off.)

Lt. Comm: You must spend a great deal of time on motorized patrolling, since that is one of the main functions of your new organization.

Lt. Recon: We need all the training on that phase which we can possibly allot to it. You'll remember that you

pointed out to me some of the disadvantages of a motorized patrol? Well, only by constant training and practice can we minimize those disadvantages.

Lt. Comm: You told me the other day your biggest worry is the danger of being ambushed. Motorized patrols seem to me to be very vulnerable in that respect. What do you plan to do about it?

Lt. Recon: Our whole system of motorized patrolling is organized to guard against that danger. You see, there are three methods which the platoon may employ during the course of a mission. When danger of ambush is not great, the patrol operates entirely in vehicles, observing from the vehicle as it moves along at a moderate rate. But, when attack or ambush is probable, the patrol moves by bounds from one observation point to the next, dismounting and observing at each point.

Lt. Comm: Does the length of the bounds vary from time to time?

Lt. Recon: That depends upon how soon we expect contact with the enemy and upon the terrain over which the patrol is moving. When we don't expect contact with the enemy or when we're in a hurry, the bounds are longer. But, when we get close to the enemy, we move by short bounds from one observation point to the next.

Lt. Comm: The leading vehicle is responsible for the dismounted reconnaissance in these short bounds?

Lt. Recon: That's right, and the patrol leader will be in the forward vehicle. While the forward vehicle is making a dismounted reconnaissance or is moving forward, it is covered by the second vehicle. Of course, when we operate in particularly dangerous areas, and when the visibility is limited, the leading element makes its reconnaissance on foot.

Lt. Comm: You said there was a third method used by the platoon.

Lt. Recon: Yes, sometimes we are ordered to proceed on the motors directly to a designated area, and search that area carefully on foot.

Lt. Comm: I suppose that no matter what method you employ, you always use a "get-away" vehicle.

Lt. Recon: You're right about that. The last vehicle is the "get-away." It follows the preceding trucks cautiously and faces to the rear when halted. Then, if the leading elements get in serious trouble, it speeds back to our own troops with the information. It also guards against attack from the rear and pays attention to routes leading from the flanks.

Lt. Comm: By the way, you spoke the other day about extending in depth. What distances do you maintain between your vehicles?

Lt. Recon: The distance between vehicles is never less than 35 to 50 yards. But, vehicles must be close enough to each other to give support. Just how close this must be depends upon the conditions of the road, the available cover, and the weather. At any rate, the patrols are always disposed in depth. That's SOP (standing operating procedure).

Lt. Comm: Doesn't this extension in depth make it more difficult for the leader to maintain control?

Lt. Recon: It is a serious problem all right, because a patrol leader must maintain control of his unit at all times. Also, a vehicle which is out of contact with the patrol for any length of time not only loses its value, but constitutes a serious loss to its unit which is depending upon all of its elements to assist in the mission. To offset this handicap, we use prearranged arm-and-hand signals, and connecting files for dismounted reconnaissance. Constant training and drilling, with emphasis on teamwork, is necessary to effect maximum control.

Lt. Comm: Wouldn't it help out if the leader told the patrol at the start of the reconnaissance as much about the extent and direction of the bounds as he can?

Lt. Recon: Yes, all possible planning is done before the the patrol sets out, and, at each halt, the patrol leader designates a rallying point at which vehicles or individuals will assemble if they become dispersed by the enemy. When moving by bounds, each rallying point is usually close in rear of the last point where the platoon halted in observation. If more than one patrol is operating at a time, the platoon leader designates phase-lines in order to coordinate their activities.

Lt. Comm: During halts do you take time to camouflage your vehicles and send out guards?

Lt. Recon: It's SOP with us that during halts we choose positions affording cover for the vehicles, and see that they are not too close together and that they face to a flank so that we can make a get-away to the front or rear. Whenever we stop, we always establish all-around observation and protection. In hostile territory, halts are as brief as possible. Continuous alertness is necessary to avoid surprise. And, the same alertness is necessary to guard against attack from the air.

Lt. Comm: If attacked by planes while you are moving, you have to swerve off the road, don't you?

Lt. Recon: We turn sharply to a flank to escape from the path of the plane, and if time permits, we halt our vehicles, dismount and fire at the planes.

Lt. Comm: Your more common danger is from the ground, though—what about road blocks? Don't they slow you down considerably?

Lt. Recon: Yes, because they force us to dismount and reconnoiter on foot. Each road block must be reconnoitered to determine if it is defended or is nothing more than a

road block. It is better to take time for dismounted scouting than to rush blindly into the enemy's trap. When we have been ordered specifically to obtain information on road blocks, a careful reconnaissance is necessary to determine the nature of each obstacle, whether it is isolated or one of a series, and how it is defended.

Lt. Comm: Any suspicious area or point would be searched in much the same way?

Lt. Recon: When we come to a railroad, or a stream crossing, or a wooded area, we dispatch a dismounted patrol to investigate while the remainder of the platoon waits, under cover, and with all-around observation, ready to give immediate support. And, when the patrol passes over a bridge or through a defile, the leading vehicles are always covered by the others. The rear elements of the platoon always wait until the forward elements have cleared the far end.

Lt. Comm: If an ambush is probable, do you send men ahead on foot to cover the passage of the leading vehicles?

Lt. Recon: Yes. We must be even more cautious in reconnoitering a small village, or a group of buildings. We avoid exposed roads and approaches. One vehicle is held in a covered and concealed position. The men in that vehicle observe the other vehicles as they approach cautiously, using covered routes whenever possible.

Lt. Comm: Then, the rear cars always cover the advance of the leading cars.

Lt. Recon: Right. When the buildings are reached, part of the unit operates dismounted while the remainder operates as a mounted patrol on the principal streets.

Lt. Comm: I can see that here, more than ever, you would have to guard against surprise attack. One man would have to cover another man, and one vehicle the preceding one. Everyone would have to be alert, and radio messages should be transmitted cautiously. But, what happens when you contact the enemy? You told me that you

don't have the strength to make a stand and must avoid combat whenever possible. Is it a case of "contact-and-run?"

Lt. Recon: The general rule in that case is to take cover, reconnoiter, and then act. Our action would depend upon several factors such as the mission which had been assigned, the terrain over which we were operating, and the strength of the enemy. Under certain circumstances, we might leave several members of our patrol to maintain contact with the enemy, while the bulk of the patrol bypassed the enemy and continued on the mission. Or, we might report the enemy situation and await further instructions from the commander, or return to the regiment if the mission had been accomplished. It all depends upon the job given us.

Lt. Comm: Since visibility plays such an important part in the work of your patrol, I suppose most of your activity stops during bad weather or fog when visibility is poor.

Lt. Recon: On the contrary, that's when we are busiest. The enemy invariably becomes quite active when he thinks we can't observe him. When visibility is poor, we are assigned specific areas in which to observe or reconnoiter. We establish listening posts, and we patrol the routes leading into or past the area.

Lt. Comm: Patrolling a road net is quite an assignment, even when the visibility is good.

Lt. Recon: Oh, that's one of our specialties. In defensive situations we often are called upon to furnish motorized patrols to cover at irregular intervals the roads in the immediate vicinity of the regimental CP. In addition to our patrols on the road, we set up observation posts some distance from and surrounding the CP. We locate our vehicles near by, using them for messenger purposes, and to effect reliefs. Don't get the idea, however, that we are charged with defending the command post. The actual

job of defending is assigned to the other units detailed for that mission. We act merely as a warning agency to warn those units of hostile air, mechanized, or airborne attack.

Lt. Comm: It strikes me that one of your big jobs at all times is to prevent your vehicles from falling into enemy hands.

Lt. Recon: We intend never to let a vehicle of ours be captured intact by the enemy. If we don't have a demolition kit handy, we can use an axe or pick to smash the engine block, gas tank, steering gear, and to rip the tires. And, to finish off the job, we can use gasoline from the tank to ignite the wreckage.

Lt. Comm: You said that orders from S-2 stated *what* information you were going after?

Lt. Recon: Yes—and usually his orders include specific questions such as "Are certain bridges intact?" "Is that road passable for our vehicles?" "Where is Company C's right flank?" But I issue instructions as to *how* we will operate. S-2 and I have to work very closely together. In some cases, I could almost be considered assistant to S-2, and, many times, S-2 will go with our patrols.

Lt. Comm: This has been an interesting discussion, Recon. I wish I were going to have more opportunity to observe your motorized patrols, but I'll probably be tied up with affairs at the CP.

Lt. Recon: If you are interested, Comm, and can possibly spare the time, you might like to come along on one of our motorized patrolling problems next week—say Tuesday or Wednesday?

Lt. Comm: When we get back to the Orderly Room, we'll compare schedules. I'd like to come along, if I can.

Lt. Recon: OK., and in the meantime I'll jot down another memo for you regarding the tactical employment of the platoon. This will give you a more comprehensive idea of what the platoon may be called upon to do.

(Curtain)

Memorandum for Lt. Comm:

TACTICAL EMPLOYMENT OF THE INTELLIGENCE AND RECONNAISSANCE PLATOON

The intelligence and reconnaissance platoon operates between the regiment and the enemy or between the regiment and reconnaissance elements of the division. It obtains whatever specific information the regimental commander desires, and sends it back to him as soon as possible.

Its four main functions are:

1. To act as a warning unit to warn the regiment of air, ground, and mechanized attack.
2. To make cross-country reconnaissance.
3. To establish and maintain contact with the enemy.
4. To man forward observation posts.

In an advance—The intelligence and reconnaissance platoon usually operates from three to five miles ahead of the advance guard. The platoon, or its elements, obtains specific information of the enemy from units of the reconnaissance troop of the division or other covering forces, if present; otherwise it operates to gain early contact with leading hostile elements. It secures timely information of the terrain and route of advance of the regiment. It may be charged with reconnoitering exposed flanks, under regiment control, or its elements may be attached to flank guards.

When the advance guard contacts the enemy, the reconaissance squads are used to locate and maintain contact with the hostile flanks, operate observation posts, or patrol to the front.

When the regiment develops and takes up the approach march on a broad front, elements of the platoon may be used for close cross-country reconnaissance; the remainder of the platoon may conduct more distant reconnaissance to the front or flank.

With a motorized column—The platoon may be directed to reconnoiter flank roads and dominating terrain features along and adjacent to the route of march. On such a mission, all elements of the platoon must move rapidly and continuously; patrols sent out from it can make only a cursory examination of the areas in which they operate. The speed of the main column must be maintained.

In attack—Elements of the platoon may be employed to—

1. Man the regimental observation post and alternate observation post.
2. Operate with elements of leading battalions.
3. Furnish individuals to operate with reconnaissance patrols, security detachments, raiding parties, or connecting groups.
4. Furnish individuals to assist S-2 at the command post.
5. Provide warning against air and mechanized attack, attack of airborne troops, and the infiltration of hostile groups.
6. Regain contact with adjacent friendly units.

Members of the platoon not used on missions named above should be held near the command post prepared for immediate employment.

In defense—If the defensive position is covered by a general outpost, the platoon initially operates between it and the combat outpost.

If there is no general outpost, the platoon initially operates to the front of the combat outpost. It gains contact with the enemy, and reports the movements of his leading elements until they make contact with the combat outpost.

If one or both flanks of the regiment are exposed, the platoon is used primarily for reconnaissance of the exposed flanks. It gains and maintains contact with the enemy and reports any hostile outflanking movements.

After the enemy has gained contact with the combat outpost, elements of the platoon may be employed to:

1. Continue reconnaissance on exposed flanks.
2. Man the regimental observation post and alternate observation post.
3. Furnish individuals to assist S-2 at the command post, and to operate with patrols or other security elements.
4. Provide warning against air and mechanized attacks, airborne troops, and infiltrating hostile groups.

In delaying action—The platoon operates in advance of the initial delaying position and toward the exposed flanks. It maintains contact with the outpost, establishes and maintains contact with the hostile forces, and reports any evidence of hostile movement around the flanks of the delaying position. During withdrawals to any successive delaying positions and during the delaying action on such positions, it operates with or ahead of the foremost delaying elements and toward the exposed flanks of the regiment, and performs the same mission as for the initial delaying position.

In daylight withdrawal—Elements of the platoon operate with or ahead of the covering force while the withdrawal of front-line battalions is being accomplished. Thereafter, they continue their operations with the successive delaying echelons as described above under delaying action.

In night withdrawal—When the covering force withdraws, the platoon remains on or near the vacated position, maintains contact with the enemy, reports the movements of his leading elements, and maintains general surveillance of the area between itself and the next elements in the rear.

SCENE IV

Time: Early morning in August.

Place: Training area which includes varied terrain.

Lt. Recon and the intelligence and reconnaissance platoon are preparing to begin an exercise in motorized patrolling. Lt. Comm approaches.

Lt. Recon: Glad to see that you could come with us on this problem, Comm.

Lt. Comm: I'm glad I could arrange it, too, for I am interested in seeing your motorized patrols in action. What is the problem?

Lt. Recon: One involving the regiment in attack. Here's a map and a few notes on the situation. You can be looking them over while the platoon sergeant assembles the men.

Lt. Comm: Are you using the whole platoon in the problem?

Lt. Recon: All of my men except five. They, plus five basics whom I borrowed from company headquarters will act as enemy and in administrative capacities. I am using the basics for an enemy detail with one of my own men as umpire with them. I'm using Staff Sergeant White to umpire the first squad. Three men will stay here at the command post. I'm leaving one of our SCR 511's here so we can send messages back. The men at the CP have their instructions in regard to answering the messages. I used the company headquarters basics as enemy so that as many of my own men as possible could participate in the training. (Aside) Sergeant Riley—

Sgt. Riley: Yes, sir.

Lt. Recon: Assemble the men, and we'll start the problem.

(The men are assembled)

Lt. Recon: From now on, men, and until I give the signal for the critique, the situation is tactical. We will conduct ourselves as we would under actual battle conditions. Gather around this sketch (Figure 8) while I explain the

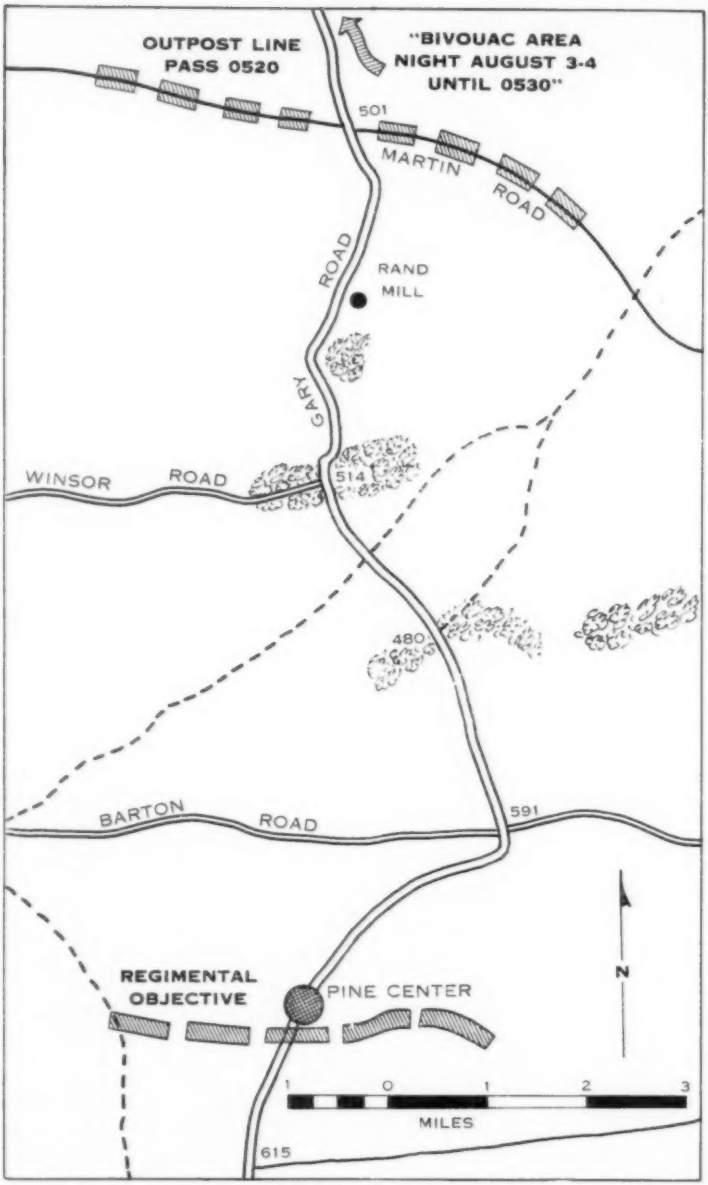

OUTPOST LINE
PASS 0520
"BIVOUAC AREA
NIGHT AUGUST 3-4
UNTIL 0530"
501
MARTIN
ROAD
ROAD
RAND
MILL
GARY
WINSOR
ROAD
514
480
BARTON
ROAD
591
REGIMENTAL
OBJECTIVE
PINE CENTER
N
1
0
1
2
3
MILES
615

FIGURE 8.

situation. Yesterday the 1st Division, of which our regiment is a part, advanced south into enemy territory with the mission of seizing the high ground running generally east and west through Pine Center. Last night our regiment, the 1st Infantry, bivouacked in the area where we are now, north of CR 501.

Enemy patrols and small delaying detachments are known to be active south of Martin Road. Our Division Reconnaissance Troop is operating to the south. Our regiment, the west column of the division, marches by this route (pointing along Gary Road) to seize and hold the high ground through Pine Center. This patrol precedes the advance guard of the regiment by from three to five miles.

We are to obtain answers to the following questions:

1. Are there hostile troops along, or closely adjacent to the route of march? If so, where are they? What are they doing? How strong are they? Do they have automatic weapons? Motors? Mechanized equipment?
2. At what point, if any, is our route blocked? How?
3. Are the bridges intact on the route? Will they support our vehicles?
4. Is Pine Center free of enemy troops? Will the civilian inhabitants of Pine Center oppose our march?

We will move south of Pine Center to RJ 615, halt, remain in observation and await further orders. We are to report all contact and all positive information when obtained, and report negative information upon reaching RJ 514, trail junction 480, CR 591, Pine Center, and RJ 615.

We pass through the outpost line at 0520. Is the situation clear? Are there any questions?

Sergeant Riley, you will have the first squad less one scout. Sergeant Flanagan, you will have the second squad less one scout. These men and two men from the platoon headquarters (topographic draftsman, and scout) will be used by our regiment for other missions.

Sergeant Flanagan, you will be second-in-command.

Sergeant Riley, have you inspected all vehicles as I directed?

Sgt. Riley: Yes, sir. Everything is ready to move.

Lt. Recon: Good. Sergeants, assist me in the inspection of the squads. Is there any man who has not been fed? Does any man feel sick? Hold out your cooked lunches—your ration "C." Shake your canteens. Are they full? Do you have first aid kits? Have you your compasses? Is there any man who does not have his extra ammunition? Are your rifles loaded? Corporals and chauffeurs with Springfields, do you have your AT grenades and launchers? NCO's, do you have your field glasses? Radio operators, are your sets in order? Operator of the SCR 284, do you have the regimental channel and an alternate regimental channel to use in case the enemy jams your first channel? Sergeant Riley, after we pass the outpost at CR 501, your squad will be the leading element of the patrol. Staff Sergeant White will be the umpire of your squad. My truck will follow Sergeant Riley's squad. Radio operator, ride in the left rear seat of my truck. Listen in, and observe to the left flank. Observer, ride in the right rear seat, observe to the right flank, and watch the second squad for signals. Chauffeur, watch the first squad for signals.

Sgt. Flanagan, your squad follows my truck. Be prepared to move to either flank on my signal or order. Your third truck will be the get-away vehicle for the patrol. Lt. Comm will umpire your squad.

Sergeants, organize your squads and be ready to move out at 0510. It is now 0500. (See Figure 9 for disposition of platoon.)

(The sergeants call out "First Squad," "Second Squad," and assemble their squads at some distance from each other. Squads are organized similarly and concurrently.)

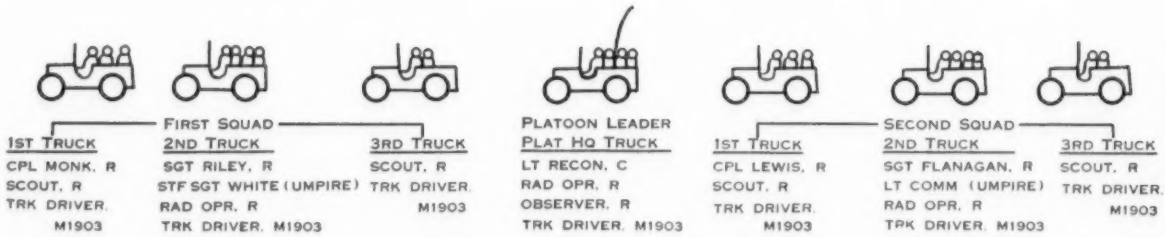


FIGURE 9.—Disposition of the platoon at the beginning of the exercise.

Sgt. Riley: Corporal Monk, assistant squad leader, ride in the right front seat of the first truck and observe to the front and right flank. Take this sketch and follow the route shown. I'll watch for your signals.

Scout No. 1, ride in the rear seat of the first truck. Observe to the left flank and watch to the rear for signals.

Radio operator, ride in the rear seat of the second truck, observe to the left flank, and watch to the rear for signals. I'll observe to the right flank.

Scout No. 2, ride in the front seat of the third truck, observe to the right, and watch me for signals.

Drivers, be prepared to protect your vehicles at all halts.

I will ride in the front seat of the second truck. The umpire of this squad will ride with me.

Any questions? Go back to your trucks and be ready to move out on my signal.

(Men return to trucks. Lt. Recon moves up in his truck and signals to the squad leaders who move up their squads.)

Lt. Recon: Follow me at 10 yards distance to the outpost at CR 501. (To Lt. Comm) We may keep closed up this way now, since we're in rear of the outpost lines.

(At 0517, Lt. Recon halts the patrol under cover in the vicinity of CR 501, where he simulates consulting the outguard commander. He returns to his patrol and issues the following oral order:)

"No change in the situation. Our patrol will advance by bounds along this road (points south along Gary Road). Speed: 25 miles per hour. Reconnoiter dangerous ground on both flanks for a distance of 300 yards. Maintain visual contact between vehicles at all times. First bound —that crest just south of Rand Mill. Rallying point: here. Any questions? It is now 0520. Sgt. Riley, move out."

(The patrol moves south on Gary road, with 50 to 100 yards distance between vehicles. Shortly after the point truck clears the crest south of Rand Mill, a lone vehicle with

Japanese characters painted on it approaches from beyond the road bend 400 yards ahead. The point truck immediately moves off the road, its occupants dismounting and opening fire). The driver of the enemy truck, however, turns it around and speeds off to the south while the other occupant of the truck fires from the rear of the moving vehicle.

Sgt. Riley, who has lost visual contact with the point truck, is still north of the crest when he hears the firing and has his second and third vehicles halt under cover off the road. Lt. Recon also hears the firing and has the remainder of the patrol halt under cover off the road. All men dismount as soon as their vehicles halt.

Sgt. Riley and the umpire, Sgt. White, move under cover and on foot to join Corporal Monk. The corporal describes the action, and Sgt. White makes a note concerning the error committed by the men of the point truck when they opened fire on the enemy vehicle instead of trying to ambush it. Corporal Monk states further that he has sent Scout No. 1 to reconnoiter to the front through the woods on the left of the road. Sgt. Riley then directs Corporal Monk to move to the front and signal back to him when he reaches a point from which he can see beyond the bend in the road.

Protected by the driver, Corporal Monk moves under cover to the road bend, where he observes the enemy vehicle disappearing in the distance. Scout No. 1 joins him. Corporal Monk steps into the road and signals, "All clear" to Sgt. Riley.

At this time, Lt. Recon, who has moved on foot and under cover, reaches Sgt. Riley. With Lt. Recon is his radio operator.)

Lt. Recon: What's up, Sgt. Riley?

Sgt. Riley: Our point surprised an enemy truck coming around that curve down there. The men in the point truck opened fire on it. It then swung around and ran south. It had a driver and a rifleman in it. The corporal and the scout moved down the road and just now signalled

"All clear." Their truck is over there (pointing). I left my other two trucks under cover about a hundred yards north of here.

Lt. Recon: Radio operator, come here. Send this message back to regimental CP. Use our prearranged code. "Met one enemy vehicle two miles south of RJ 501. It fired a few shots and fled south. Will proceed on mission."

Radio Operator: Yes, sir.

(The operator then sent the following message:)

Met		farmer	two horses
(Met)		(one enemy vehicle)	(two miles)
Chicago	501	It	drizzled
(south of)	(RJ 501)	(It)	(fired a few shots)
and fled	Chicago	PDQ	
(and fled)	(south).	(Will proceed on mission).	

Lt. Recon: Sgt. Riley, our next bound is to the high ground near RJ 514. Rallying point: Rand Mill. Move out.

(The patrol continues on its route, and at 0600 the leading vehicle approaches the high ground at RJ 514. Corporal Monk observes the wooded terrain and signals back, "Dangerous ground ahead." He immediately dismounts and moves cross-country to the left (east) to reconnoiter. Sgt. Riley, seeing this signal and action, signals to Scout No. 2 of the third truck to dismount and examine the wooded area on the right.

Sgt. Riley continues forward in his vehicle to a point just north of the crest at RJ 514, where the other two vehicles of the first squad join him and all trucks halt, dispersed under cover. All occupants dismount. The drivers remain near their vehicles and the remaining members of the squad move individually to the crest. Sgt. Riley observes to the front, while Corporal Monk of the point truck and Scout No. 2 of the third truck observe to the left and right, respectively. Meanwhile, Lt. Recon and the remainder of the patrol have halted under cover beyond the curve in the road immediately north of RJ 514.

When Corporal Monk and Scout No. 2 signal "All clear," Sgt. Riley sends Scout No. 1 into the road to pass the signal to Lt. Recon, who moves his own truck and the second squad around the road bend and halts them under cover, off the road, about 200 yards to the rear of the first squad. Accompanied by his radio operator and Sgt. Flanagan, Lt. Recon joins Sgt. Riley near RJ 514.)

Sgt. Riley: Sir, this road running to the west from RJ 514 is shown on our sketch, but there's a trail going to the east which isn't shown on the sketch. Can't see any more of the enemy. My first truck is concealed over there about 40 yards to the east, and the third is right over there across the road about 50 yards (pointing). The men forward have signaled, "All clear."

Lt. Recon: S-2 wants a negative report from this spot. It looks quite dangerous. We'd better be sure before we report there's nothing around. Sgt. Flanagan, send out one of your trucks to cover that road (pointing to Winsor Road) for about 500 yards and another to cover the unmarked trail for the same distance. Tell your men to dismount when the first squad can no longer cover their movement. Signal back and remain in observation until we move forward. I will remain here.

(Sgt. Flanagan rejoins his squad and dispatches the two vehicles. The first squad remains in position. The platoon vehicle is under cover, off the road. The get-away truck is under cover at the road bend, faced to the rear. The driver is in the get-away truck; the observer has dismounted and is watching to the front for signals. Soon, members of the first squad receive, and transmit to Sgt. Riley, signals from the second squad flank vehicles that no enemy has been seen.)

Lt. Recon: (To radio operator.) Send the following, in code, to regiment. "All clear at RJ 514. Proceeding."

(To Sgt. Riley.) Sergeant, the next bound is to the high ground at trail junction 480. Rallying point: here. Have your squad move out. I'll notify Sgt. Flanagan's squad as we pass RJ 514.

(The patrol continues along its route. As the point truck approaches a crest 200 yards northwest of trail junction 480, Corporal Monk directs Scout No. 1 to precede the vehicle on foot and observe beyond the crest. The scout moves to the crest and observes the road to the front. Suspecting an ambush, he signals the point truck, "Dangerous ground ahead." He then moves to the left, across country, followed at about 25 yards by the point truck. As the scout approaches the northern edge of the woods, the point truck receives considerable rifle and automatic fire from the front. Staff Sergeant White, umpire with the first squad, rules that the driver of the point truck is killed and the truck is immobilized.

Sgt. Riley, upon hearing the fire to his front, moves his second and third trucks off the road, and, keeping under cover, hurries forward on foot to contact Corporal Monk. Quickly estimating the situation, the sergeant directs Corporal Monk and Scout No. 1 to press their reconnaissance and to report findings to him. Sgt. Riley then returns to his third vehicle and orders Scout No. 2 to move by truck well to the left (east) of the first vehicle and then reconnoiter to locate additional enemy elements.

Lt. Recon hears the firing and signals all vehicles (less those of the first squad) off the road. He signals his radio operator and Sgt. Flanagan to join him. The three move forward, dismounted, to contact Sgt. Riley.)

Lt. Recon: What happened, Sergeant?

Sgt. Riley: Corporal Monk thought this road might be ambushed and ran his truck over into that field. Just as it got down about 50 yards, the enemy cut loose with rifles and automatics. I sent my third truck out on the left of the first, and we're trying to find out what's down there.

Lt. Recon: Continue your reconnaissance, Sgt. Riley, to see whether we can pass around the left (east) of that enemy group. Find out how strong they are and what sort of weapons they have. Report to me here in 30 minutes. Any questions? Move out. Sgt. Flanagan, take your squad, less the get-away truck, and see whether we can get around the other (west) flank. Work around under cover of these woods. Report to me here in 30 minutes. Any questions? Move out."

(Lt. Recon remains at the concealed observation point in the woods overlooking trail junction 480. As the second squad moves, off vehicles, to the west of the trail junction, machine-gun fire opens from a concealed position to the west.

The two squad leaders complete their reconnaissance and return to the patrol leader at the observation point.)

Sgt. Riley: There are three or four old shacks down there in the hollow, and the enemy have an automatic rifle in one of the houses and riflemen in the others. We can't get around the enemy because of the heavy woods east of their position.

Lt. Recon: O.K., Sergeant. When you go back, have your squad continue its observation and maintain contact. Hold your fire unless they try to move in on you.

Sgt. Flanagan: A light machine gun, in the woods several hundred yards west of the road, opened up on my first few men as we got to the forward edge of those woods. The umpire ruled that Jones and Perkins are casualties. I believe we can get by if we move through these woods, and then cut over to the right, along the south edge. However, I thought I picked up a lot of movement up on the high ground along the Barton Road.

Lt. Recon: We surely hit the jackpot this time. And, to make things worse, they've found our radio channel and are jamming it. That's why you haven't been able to get through to me by radio and I can't get through to regi-

ment. Return to your squads and maintain contact with them for the time being. Keep your eyes open. Have your men well spread out and shoot only if they try to move in on you. Keep me informed. I'll be here.

(Lt. Recon writes the following on a message blank which he hands to his radio operator: "Enemy groups located east and west of trail junction 480. 3 men dead, 1 truck out of action. Will maintain contact, pending further orders.")

Lt. Recon: (To radio operator) Change to the alternate channel and send this message in code to the regimental commander. As soon as you get an answer, bring it to me here. Any questions?

(As the radio operator begins to send the message, Lt. Recon blows a whistle, signaling the end of the first phase of the exercise. Patrol members, umpires, and the enemy detail assemble for the critique.)

CRITIQUE OF ACTIONS OF FIRST SQUAD

By Staff Sergeant White:

"The general conduct of this unit was good. Between points of action their movement was aggressive, but with the necessary amount of caution. The men in the point truck, particularly, showed initiative.

"Just before reaching Rand Mill, where the enemy vehicle was encountered, the second truck of the squad was separated from the point by a crest; visual contact between vehicles was lost. Because of this, the squad leader who was in the second truck could not see the action. Time, therefore, was lost by his having to move forward, on foot, to the point vehicle and ask what had happened. Had visual contact been maintained as directed, he would have seen the action and realized it was safe to drive forward to the point truck as soon as the enemy vehicle had left. Thus he would have had a better knowledge of what had happened and would have saved time, not only by avoiding the necessity of asking

what had happened, but also by arriving earlier at the scene of the action.

"In the same engagement, the occupants of the point truck opened fire on the enemy vehicle before they were fired upon, and therefore before they knew whether or not the enemy had seen them. Had they not done this, the enemy might not have seen them, and an ambush and capture of the enemy might have been possible. The action these men took warned the enemy of their presence. Having done this, their only chance of preventing the enemy from returning to their unit with news of our presence, was to score a hit when firing upon them. The chances of scoring such a hit are small.

"When moving across country just before the final engagement, the point truck, in following Scout No. 1, failed to take proper advantage of available cover. Also, it followed closely behind the scout, and thus the driver had no opportunity to take cover when the enemy opened fire. Because of this, the truck was declared disabled, and the driver declared a casualty."

After additional comments and discussion, the second phase of the exercise was then begun.

CHAPTER 4

Terrain Appreciation

PART I

General Principles

This discussion consists of three parts—the general principles underlying terrain appreciation, their application to defensive operations, and their application to offensive operations.

From a military viewpoint, terrain is an area or region to be considered in relation to its use in tactical operations. Study of maps and aerial photographs should enable one to visualize the terrain represented by a map. Map reading is an entirely technical study. Its goal is accomplished when the student studying a map sees not a collection of roads and towns marked in black, contours in brown, woods in green, and streams in blue, but an actual, small-scale replica of the ground with its drainage system, its commanding elevations, its wooded and open areas, and its works of man.

"Terrain appreciation" projects this visualization to its ultimate purpose: namely, the ability to determine the influence of the terrain in question on whatever military operations are contemplated by our forces, and on those operations which the enemy forces may undertake. Determination of this influence of the terrain is not a technical matter; no rules definitely govern it. On the contrary, it involves application of one's judgment as to the relative importance of several different factors. This article treats of the proper evaluation of these factors.

The importance of certain terrain features varies with the size of the unit involved. In considering various features such as hills, ridges, streams, woods, villages, open ground,

and roads, from the standpoint of their influence upon *observation, fields of fire, concealment, obstacles, and communication,* it is apparent that the point of view of the division commander, for example, will differ from that of the company commander. Each thinks of terrain along the same logical lines, but applies a different scale. The division commander may give only passing thought to terrain features which might be vital features, or keypoints, from the standpoint of the battalion commander. A subordinate commander should consider the terrain from three different viewpoints: first, that of his next higher commander, whose scheme of maneuver he must absorb before he can plan his own action; second, that of his own command, in order that he may plan his part adequately; and the third, that of his next subordinate commanders, to whom he assigns specific missions, usually in terms of the terrain.

To visualize ground forms from a map study is difficult for anyone and requires both training and practice. Drainage lines and ridge lines are the natural basis for study of ground forms. Accentuating the drainage lines and ridge lines on the map will greatly assist the inexperienced map reader to visualize the terrain represented thereon. While maps are the basis for terrain studies, they must be checked by air reconnaissance, air photographs, and ground reconnaissance.

The aerial photograph, either in the form of a mosaic or as a photomap, will doubtless replace the contoured (or hachured) map in many military operations in the future. Its detail, in terms of length and breadth of the area represented, is adequate and sufficiently accurate. Experience is necessary, however, to interpret properly the ground forms represented. Visualization of ground forms is greatly aided by adding the minor drainage, much of which is not easily recognized on the photomap. However, the examination of overlapping pairs of photographs with a stereoscope will show the ground forms in exaggerated relief, and the stream lines can be quickly and accurately drawn in.

In a study of terrain appreciation as applied to all terrain, rather than to a particular area, observation is the

basis for delimiting terrain units. It provides a practical yardstick for dividing an extensive area into smaller units for analysis.

Field Service Regulations contains the following regarding observation (par. 136*a*)—

> "Observation of the battlefield is essential in order to bring effective fire to bear upon the enemy, to control the maneuver of one's own troops and to prevent surprise by the enemy. It is obtained from commanding elevations."

Command and fire control are to a great measure limited by ground observation. Commanding elevations, therefore, are important because they afford extensive observation of the surrounding terrain.

Observation is also the most important factor in judging the influence of terrain on military operations. Observation is not only important in itself, but it enters largely into the influence of the four other major factors—fields of fire, concealment, obstacles, and communication—by which terrain features may be evaluated.

Ground observation is the basis for determining fields of fire. Ordinarily, the infantry soldier must be able to see his target. The artillery gunner usually does not see his target, but to fire effectively, he must have a forward observer who can see the target and adjust the fire upon it.

Concealment is the converse of observation and field of fire. It implies the value of observation, since it is based upon the denial of observation to the enemy.

For much of their effectiveness, both natural and artificial obstacles depend upon observation. Even an unfordable stream is not a serious obstacle unless it is under observation, and fire can be placed upon its banks. Tactical wire in front of a defensive position is of value only as it tends to retard the advancing enemy troops and thus bring about congestion in areas on which effective fire can be placed. Fire along a final protective line in fog, smoke, or darkness, is effective only when daylight observation has made possible the calculation of the necessary firing data.

In the combat zone, the facility with which routes of communication of all kinds can be used in daylight depends not only upon their condition, but also upon the extent to which the enemy may be denied ground observation of them. These routes include roads and other avenues of approach, used not only for purposes of supply and evacuation, but also for tactical movements.

All extensive areas are divided into smaller areas by ridges, woods, and towns. When ground observation into an area is limited on at least two opposite sides by these terrain features, the area is known as a *terrain compartment*. The location and size of the compartment and the direction of its major axis determine its suitability for tactical use.

The terrain features shown in figure 10 consist of three ridges, ABC, DEF, and GHI, separated by two stream valleys, JK and LM. The area ACFD is a terrain compartment. Observers north of the ridge ABC or south of the ridge DEF cannot see into the compartment ACFD and hence cannot bring direct fire to bear upon any part of it. Similarly, the area DFIG is a terrain compartment.

While division of terrain into compartments is based upon observation, this does not mean that in any terrain compartment, such as ACFD, all parts of the compartment are visible from any point within it. The south boundary of this compartment is the topographic crest of the ridge, DEF; but from this boundary, only the northern portion of the compartment can be seen. An observer would have to move north from a given point on the ridge DEF as far as the military crest, in order to see both slopes of the valley JK.

Boundaries of terrain compartments are not always ridge lines; they may be the edge of a woods, a town, or any other terrain feature which limits observation into all parts of the compartment.

Observation is not an end in itself, but merely a means to an end. In figure 10, machine guns at P, Q, R, or S can fire upon any forces advancing up the valley from the east (that is, upon any forces within the terrain compartment

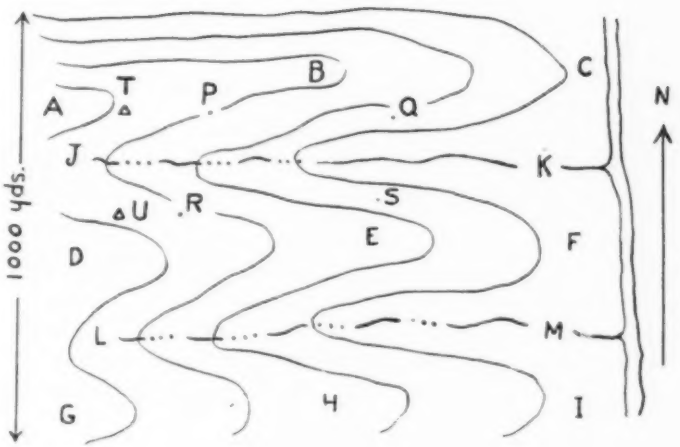


FIGURE 10.

ACFD), but they cannot place *direct* fire upon any forces in the adjoining terrain compartment DFIG, because they lack observation. For the same reason, if supporting artillery occupies defiladed positions west of the line ADG, artillery forward observers at T or U can place indirect fire upon any forces within the terrain compartment ACFD, but not upon forces in the adjoining compartment DFIG.

Conversely, a force advancing up the valley JK from the east can fire directly upon only those forces within the terrain compartment ACFD, since these are the only enemy forces it can see.

Assume that a force is attacking from the north, across the ridge ABC, with its forward elements represented by T, P, and Q, while U, R and S represent defending forces. It is apparent that a decisive phase of the fight will take place between attacking forces south of ridge ABC and defending forces north of ridge DEF—that is, between forces within the terrain compartment ACFD. The attacking force will not gain a local decision in this part of the action until it has driven the defending force out of the compartment ACFD. The next step of the attacking force would be the capture of the compartment DFIG. Therein lies the tactical significance of terrain compartments—they form the areas in which are fought the local, decisive phases of the battle between larger forces.

The influence of terrain compartments upon tactical operations depends not only upon the location, size and shape of the compartments, but particularly upon the direction of the tactical operation with reference to the longer axis of the compartment.

Terrain compartments are classified as follows:

A *corridor* is a compartment the longer dimension of which leads in the direction of movement of a force, or toward the enemy.

A *cross-compartment* is a compartment the longer dimension of which lies generally across the direction of movement of a force, or generally parallel to the front.

If the direction of advance of an attacking force were from east to west, in figure 10, the terrain compartments

ACFD and DFIG, from the point of view of the opposing forces, would be corridors. Similarly, if the direction of attack were from north to south, these same terrain features would form cross-compartments.

SUMMARY

For purposes of analysis and to assist in proper terrain appreciation, extensive terrain areas should be divided into compartments. The influence of these compartments upon tactical operations depends not only upon the location, size, and shape of the compartment, but particularly upon the direction of its longer axis. Depending upon the relation of this direction to the direction of the enemy, the compartment becomes either a corridor or a cross-compartment.

PART II

TERRAIN APPRECIATION IN DEFENSIVE OPERATIONS

SECTION I

GENERAL

This article deals with tactical principles and the organization of the ground, only insofar as is necessary to show the influence of terrain upon tactics. Terrain is only one of the factors that enter into a tactical estimate of the situation. The conclusion resulting from the estimate of the terrain is not necessarily the decision resulting from the tactical estimate of the situation. It should be borne in mind that in this discussion of the influence of terrain we are dealing with terrain only and that our conclusions are not necessarily tactical decisions. The relative importance of the terrain factor will vary between wide limits in different situations. In some situations it will be negligible and in others important; in still other situations it will be so vital as to be the determining factor in the tactical decision. In any situation

all factors, including terrain, must be considered and evaluated before making a tactical decision and arriving at a plan of action.

Since observation of the ground is essential to the placing of effective fire upon the enemy, the retention of the dominating terrain features is vital. The defense of an area is based on retaining these features by means of a series of tactical localities. These localities, each of which is prepared for all-around defense, are organized in width and in depth, and are located so as to be mutually supporting.

The division of the terrain into compartments serves to divide it into areas which have a definite meaning in tactical operations. Insofar as the influence of the terrain is concerned, plans of defense and attack are based upon terrain compartments. Consequently, they form a most logical basis for the analysis of the influence of the terrain. This can be illustrated by a few simple diagrammatic examples.

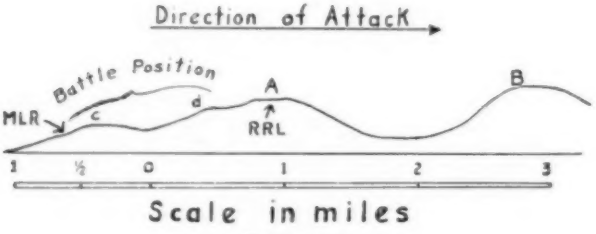


FIGURE 11.

Figure 11 represents the profile of a section of rolling terrain. The attack is expected to be from the left. A and B are the forward and rear boundaries, respectively, of the cross-compartment, AB.

From the point of view of the commander of the large unit defending this cross-compartment, retention of the forward boundary, A, is essential. This boundary affords observation of the enemy attack, without which a satisfactory defense of the cross-compartment is impossible. Within the compartment itself—that is, in the defiladed area behind the boundary A—the defense commander can

place his artillery, move his reserves, and carry out supply and evacuation movements beyond possibility of ground observation by the attacking force.

The commander of the large unit, therefore, locates his main line of resistance well forward from A. If sub-compartments exist, as indicated by the boundaries at *c* and *d*, the main line of resistance may be located in the vicinity of *c*. This provides room, between *c* and A, for the organization of a flexible defense in depth. In order to gain a decision, the attacking force must drive through the battle position and capture A, the boundary of the terrain compartment AB.

While the commander of the large unit is primarily concerned with maintaining intact his regimental reserve line, running through A, his subordinate commanders are directly interested in the sub-compartment boundaries, such as those shown at *c* and *d*. The defiladed areas behind *c* and *d* afford the smaller units opportunity for movement of supports and reserves to meet the changing phases of the attack.

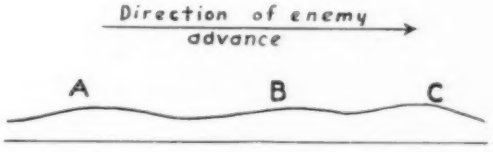


FIGURE 12.

In case the mission calls for delaying action on terrain such as that shown in profile in figure 12, the natural lines along which resistance would be made to the enemy advance are the boundaries—A, B, and C—of the terrain cross-compartments. When driven from a position at A, the delaying force would retire to another position at B; and from that to C. In other words, the steps to the rear, insofar as the terrain is concerned, are governed, by cross-compartments, providing suitable ones exist.

The examples given are diagrammatic; they are intended to show terrain conditions in which certain definite advantages accrue if the terrain is properly used. Many factors may militate against the utilization of these advantages. A position that offers many advantages, from the standpoint of terrain, may be so situated that its occupation is inconsistent with effective accomplishment of the mission; or, in a meeting engagement, time and space factors may preclude the possibility of its occupation. In another situation, the spacing of the cross-compartment boundaries may not permit their use. For example, in the case of the delaying action illustrated in figure 12, the cross-compartment boundary at B must be situated at a suitable distance from A; if it is too close, the time element may prevent its use, or enemy artillery may be able to fire upon it without having to displace forward. If it is too far away, its occupation as the next step in the delaying action may not be consistent with the accomplishment of the mission.

In other words, there are no rules governing the use of the terrain; there are, however, certain underlying principles the appreciation of which will enable the commander to utilize all the advantages that the terrain may offer.

Figures 13 and 14 represent the same terrain—a series of ridges forming two terrain compartments, ACDB and CEFD. In figure 13 this terrain is to be defended against an attack from the south. In figure 14 it is to be defended against an attack from the east. The representation is diagrammatic and is intended to illustrate certain principles, not to show an actual type of organization. The frontage to be defended is the same in both cases. The number of infantry weapons and the number of artillery observation posts are the same in both cases.

In figure 13, the attack is directed against the entire front, but suppose, by reason of better cover for the approach, the attacker finds penetration easier in the valley between D and F. The penetration reaches the dashed line in the valley between D and F, and becomes a serious menace to the defending force. It subjects to flank attack the organized

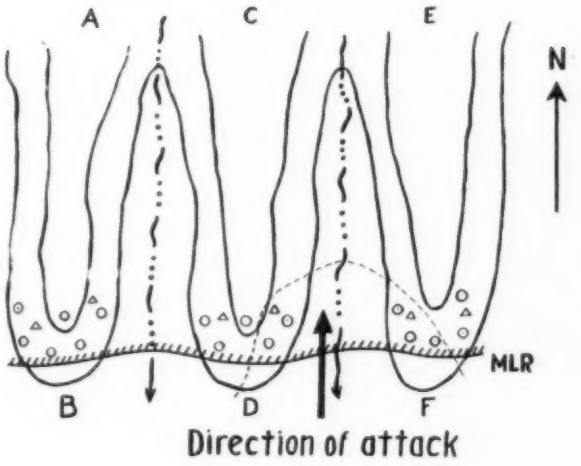


FIGURE 13.

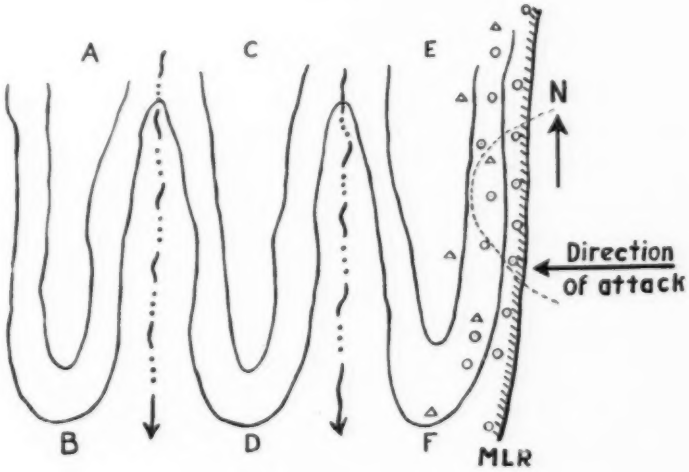


FIGURE 14.

locality north of D, or that north of F, whichever the attacker may consider the more vulnerable. Other parts of the front are not seriously threatened. However, the defender cannot bring additional direct fire to bear upon this threat because the crests of the noses CD and EF prohibit observation of the target from positions outside the corridor CEFD.

In figure 14, the attack is again directed against the entire front, but by reason of more favorable local conditions regarding cover, the center makes better progress, penetrates to the dashed line and becomes a major threat to the defense of the area. All of the circumstances of this situation and that outlined by figure 13 are identical except the direction of attack. In the situation indicated by figure 14, however, the ridge EF is the boundary of a cross-compartment rather than of a corridor and does not limit lateral observation of the entire position. Other weapons within the cross-compartment bounded by EF can place direct, flanking fire on the threat to the center of the position.

Terrain corridors limit the lateral observation of the defense and divide its total fire power into groups which cannot support each other by direct fire. Cross-compartments do not limit the lateral observation of the defense. Hence, they afford greater flexibility of use of fire power, and permit concentration of more fire power against a major threat at any point within the cross-compartment.

A cross-compartment is, therefore, more advantageous to the defense than a series of corridors. A given force on a given front can offer a stronger defense in a cross-compartment than it can when defending a series of corridors of the same total frontage.

SECTION II

EFFECT OF TERRAIN UPON LOCATION OF BOUNDARIES BETWEEN UNITS

A military unit, whether in defense or in attack, has a definite mission, which is either assigned to it by higher headquarters or is self-assigned in pursuance of the known mission of a higher headquarters. Each unit accomplishes its mission by breaking it down into subsidiary missions and assigning these to subordinate units. One of the purposes of military organization is to facilitate this breaking-down process. Thus, it becomes necessary in each unit to assign command areas to each subordinate unit. The assignment of command areas, when units are to operate in close proximity one to another, is usually made by establishing boundaries between adjacent command areas. Let us see in what way the terrain affects the position of these boundaries.

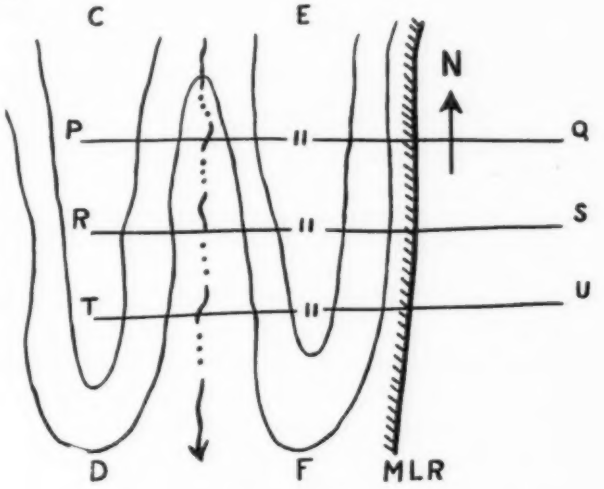


FIGURE 15.

Figure 15 shows a portion of the terrain shown in figure 14 The attack is expected from the right, (east). The main

line of resistance is well in front of the boundary EF of the cross-compartment CEFD; hence the attacking force will have to penetrate somewhat deeply into the battle position before it can reach the ridge EF which affords observation into the cross-compartment CEFD. Let us assume that the length of front from E to F is sufficient to justify the use of a regiment to defend it; also that the regimental commander decides to occupy the position with two battalions abreast and one in reserve. The next question that arises is where to locate the boundary between the two front-line battalions.

Insofar as the terrain is concerned, it makes little or no difference whether the boundary between battalions passes through P and Q, R and S, or T and U. There will be other factors in the situation which will influence the location of the boundary, but the terrain factor in this case is negligible.

The condition illustrated diagrammatically in figure 15 is somewhat unusual. A more normal condition is that found on the north slope of the valley indicated in figure 16, where spurs, roughly at right angles to the stream, run down from the main ridge which is generally parallel to the stream. Let us assume that this slope is being defended against an attack, the direction of which is approximately north. A regiment (part of a larger unit) is to be placed generally north of the stream to defend a front of about 3,000 yards. Where should we place the boundaries of this regiment and the boundary between the two battalions which it will deploy on the front line?

While the defense has a cross-compartment boundary (the main ridge through the northern edge of the map) ahead of which to place its battle position, the battle position itself is divided into a series of corridors by the spurs running from this main ridge down to the stream.

Figures 16 to 20, inclusive, show five sets of boundaries which might be applied to this terrain. The terrain is identical in all of these figures and the frontages involved are approximately the same. Any other boundaries would be minor variations of the five represented. Let us analyze

these five from the standpoint of terrain, to determine which of them employs the terrain to the best advantage.

Unity of command is highly desirable in all phases of a military operation. If it is thought that an area requires a battalion for its defense, such defense can be conducted more efficiently by one battalion commander than by two battalion commanders, each of whom disposes part of his force in the area in question. In the former case, responsibility is definitely fixed; the commander concerned is free to use all the means at his disposal before calling upon higher headquarters for assistance. In the latter case, responsibility is divided; of course, the two commanders concerned will cooperate, but a difference of opinion as to procedure can be settled only by reference to higher headquarters. The same consideration applies to the defense of probable avenues of enemy penetration.

In figure 16, all three boundaries follow ridge lines, which are the boundaries of terrain corridors. It is important that these ridges be held in order that the defending force retain its observation. If the high ground along any one of these boundaries is captured, either by frontal attack or flank attack, penetration by the attacking force will be greatly facilitated. Since one commander can defend an important tactical locality better than can two commanders, it is undesirable that the boundaries between units in a defensive position coincide with the boundaries of terrain corridors as they do in this figure.

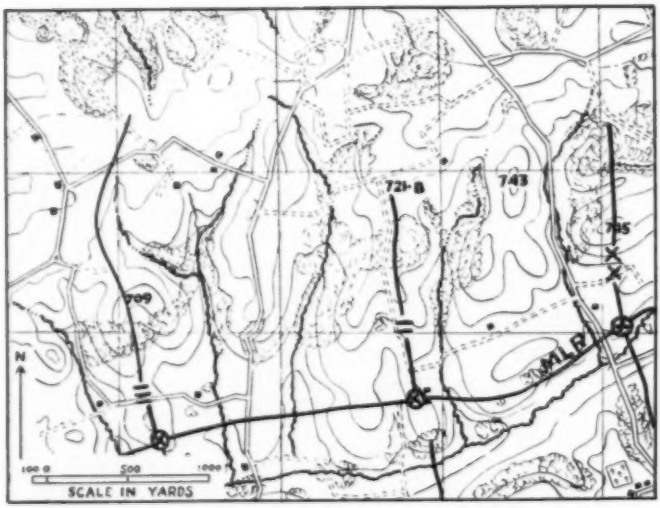


FIGURE 16.

In figure 17 the boundaries also follow ridge lines (boundaries of terrain corridors). The high ground divided between two units in this case is fully as important as that in figure 16. Therefore, these boundaries also are undesirable, because they do not use the terrain in such a way as to bring about unity of command in important tactical localities.

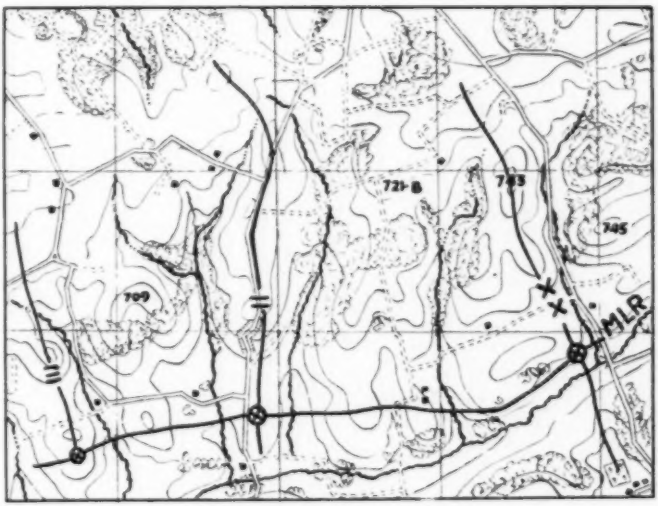


FIGURE 17.

In figure 18 the boundaries follow drainage lines. This is undesirable because it results in dividing responsibility for the defense of important avenues of approach.

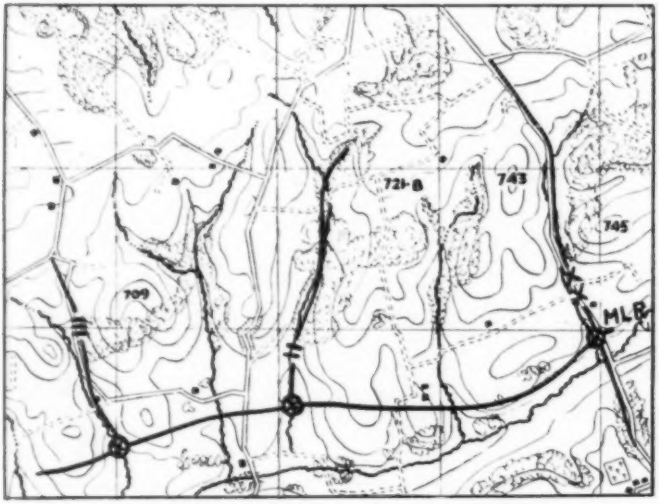


FIGURE 18.

In figure 19 the boundaries follow neither the ridge lines nor the drainage lines, but lie along the slopes of the ridges. On the east of the position, the regimental boundary (division boundary) lies along the bare slope of Hill 743. The

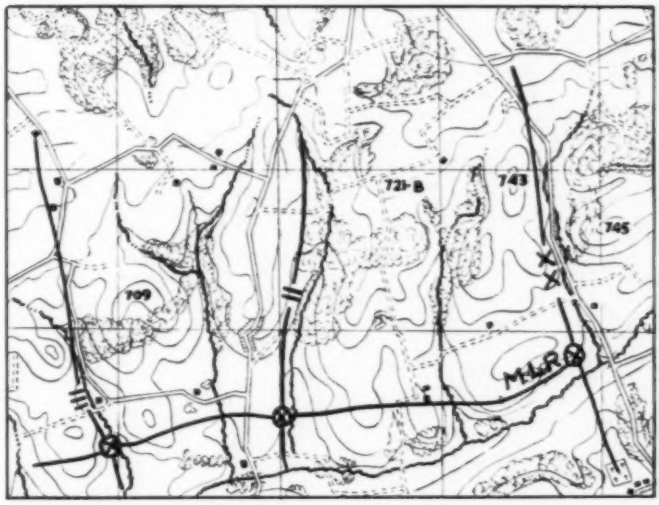


FIGURE 19.

woods on the western slope of Hill 745 furnish a probable avenue of attack against Hill 745; hence, they should be placed under the control of the commander who is responsible for the defense of Hill 745. The boundary between battalions lies along the west side of the valley in the center of the position. This places the defense of the wooded approach on the other (east) side of the valley under the control of the commander who is responsible for the defense of the ridge to which these woods form a natural avenue of approach. On the west of the position, the regimental boundary places responsibility for the defense of Hill 709 and the ridge to the east of it, together with the defense of the natural approaches to these important localities, upon

one battalion commander. In no case is responsibility for the defense of important high ground divided between two commanders, and in every case the defense of probable avenues of approach to the high ground is the single responsibility of the commander whose unit is most threatened by the approach. The terrain in this case is used in such a way as to effect unity of command. Definite terrain features such as fence lines, edges of woods or villages, roads, or trails, can be employed to determine these boundaries on the ground.

FIGURE 20.

In figure 20 the boundaries follow neither the ridges nor the drainage lines. However, the defense of the woods west of Hill 745, which afford a covered approach to that hill, is divided between two regiments; and the defense of the woods in the center of the position, which constitute a threat to the ridge running south through RJ 721-B, is divided between two battalion commanders. Hence, there is an undesirable and unnecessary division of responsibility caused by these boundaries.

It therefore appears that the boundaries shown in figure 19 are best suited to the terrain. Were it not for the woods in the area, and the threat which they offer to the adjoining localities, the boundaries shown in figures 19 and 20 would be equally desirable.

The above is not intended to imply that each unit is to conduct an independent defense of the area for which it is responsible. Adjacent units will always cooperate by the interchange of flanking fires. However, boundaries are potential points of weakness, even when there is good cooperation between the adjacent commanders. Hence when practicable, the boundaries should be placed so that this potential weakness will result in the minimum of danger to the defense. In the defense, coordination in the use of the terrain should be carried out by higher commanders to the point of assigning subordinate commanders such terrain areas as will enable each to function to the best advantage. In figure 19, not only are the defensive efforts of the regiment, from the standpoint of terrain, coordinated with those of adjacent regiments to the best advantage, but within the regiment the efforts of the front-line battalions are also fully coordinated, insofar as terrain is concerned.

SUMMARY

In this discussion of the influence of terrain on the defense, we have emphasized the following:

1. Cross-compartments are more easily defended than corridors because they allow greater flexibility of the defensive fires.

2. In the defense of cross-compartments, terrain has little, if any, influence upon the assignment of boundaries between units.

3. In the defense of corridors, the terrain is used to best advantage when boundaries between units follow neither the ridge lines nor the drainage lines, but are located along the slope between these lines so as to ensure unity of command in holding the key points (commanding elevations), and covering likely avenues of enemy approach.

Which slope to use, and where the boundary should be placed on a given slope, will be determined by the local terrain and by the fact that the commander most menaced by the approach should be given the responsibility for its defense. It is, of course, essential that boundaries between

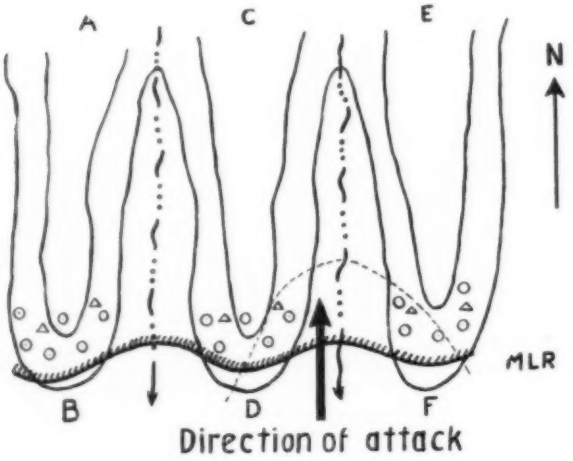


FIGURE 21.

units be readily recognizable on the ground; roads, trails, edges of woods, and fence lines offer suitable landmarks for this purpose.

PART III

TERRAIN APPRECIATION IN OFFENSIVE OPERATIONS

SECTION I

GENERAL

The influence of terrain upon the attack is determined primarily by the answers to two questions:

1. Will the terrain affect the development of the full offensive power of our main attack?
2. Will the terrain affect the flexibility of the defensive fires which can be brought to bear upon our main attack?

In answering these two questions, we must examine the influence of cross-compartments and corridors in their general effect upon the forward movement of an attacking force and upon the boundaries between units of that force.

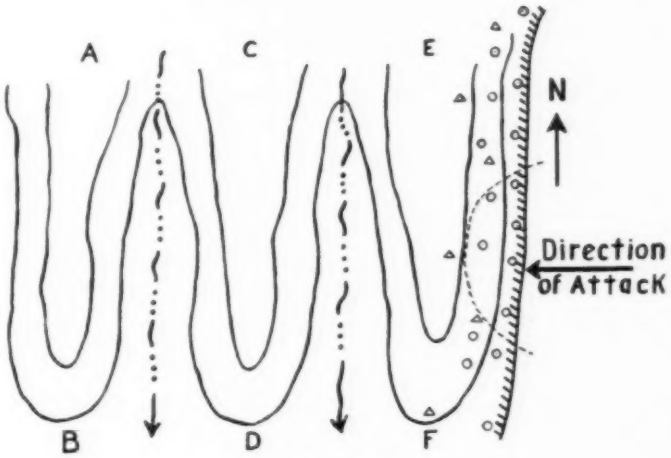


FIGURE 22.

In figure 21, a force is attacking from the south; in figure 22, it is attacking from the east. Assume that, in these two situations, all factors are constant except the relation of the

terrain to the direction of the attack. Let us determine, from the standpoint of terrain only, which of these attacks is more likely to succeed.

In the attack, the influence of terrain compartments is the converse of that for the defense. That is to say, a series of terrain corridors is more advantageous to the attack than a cross-compartment of the same frontage. A force of a given size will make better progress attacking a series of terrain corridors than it will attacking a cross-compartment of the same frontage. Conversely, a smaller force will make as good progress attacking a series of terrain corridors as a somewhat larger force attacking a cross-compartment.

A corridor extending deep into a defensive position is more advantageous to an attacking force than one which just reaches it, or stops short of it. The deep corridor permits the commander of the attacking force to observe and support his attack with fewer displacements of his observation posts and supporting weapons. He can thus exert a more continuous pressure. Of course, such a corridor will allow the defender also to use observation posts deep in his position.

Troops attacking within a corridor are afforded some protection from hostile infantry weapons located outside the corridor, because the features bounding the corridor limit ground observation into it. A unit advancing along a ridge is subject to direct fire from the enemy's troops located on either side of the ridge; hence it must divide its efforts and fire power between the corridors on each side of the ridge. A unit advancing inside a corridor would be able to concentrate its attention and entire fire power on neutralizing the ground observation and hostile fire within that corridor. With this in mind, the attack outlined in figure 21 would appear more likely to succeed than that outlined in figure 22.

SECTION II

EFFECT OF TERRAIN UPON LOCATION OF BOUNDARIES BETWEEN UNITS

From the above, it is obvious that, *in terms of terrain only*, an attack through a corridor is much more likely to succeed than an attack through a cross-compartment. However, direction of attack is seldom determined by terrain alone; usually there will be other factors which will necessitate making an attack through a cross-compartment. Assume that in the situation indicated in figure 23, an attack through the cross-compartment to the east of EF is necessary. The defender has established his main line of resist-

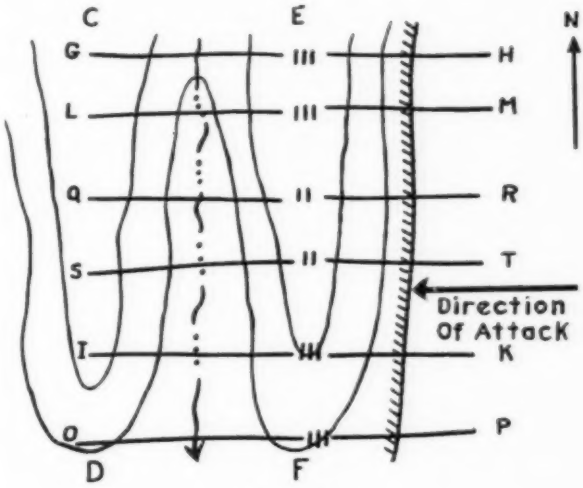


FIGURE 23.

ance as indicated, along the eastern slope of the ridge EF. From the point of view of a regimental commander of the attacking force, observation and the field of direct fire are the same, regardless of where the boundaries are established. Therefore, insofar as terrain is concerned, it makes little difference whether GH and IK or LM and OP are the

regimental boundaries. Similarly, the terrain does not indicate any advantage in selecting either QR or ST as the boundary between attacking front-line battalions. Since terrain is a negligible factor in this situation, other factors would determine the location of the boundaries.

To illustrate the influence of terrain corridors on attack boundaries, we shall use a battalion as an example. Figures 24 to 28 inclusive show the same terrain which we considered in our discussion of defensive boundaries. In this case, assume that a regiment is to attack from the south on a front of 1,500 to 2,000 yards, with two battalions in assault and one in reserve. The five figures show five different selections of boundaries for the regimental zone of action and the boundary between battalions. Let us analyze the boundaries of the left (west) battalion from the standpoint of the battalion commander. The left (west) boundary between regiments, was chosen by the division; the right (east) boundary, that between battalions, was designated by the regimental commander.

For convenience of reference, the letters, A, B, C, and D have been placed on the slopes of the ridges. These letters apply to the entire slope of the ridges on which they are placed, not merely to the particular point occupied by the letter.

We will discuss each of the five sets of boundaries for the left battalion with respect to the influence of the terrain corridors. First, we will consider the ability of the attacking battalion commander to use his offensive powers to the best advantage, and second, the ability of the defense to meet the attack of the battalion in the most effective way.

A. Influence of the Terrain on the Ability of the Battalion Commander to Use his Offensive Powers to the Best Advantage.

In figure 24 the battalion has a well-defined mission—the capture of the ridge whose slopes are B and C. As the battalion advances, however, its observation is split by the

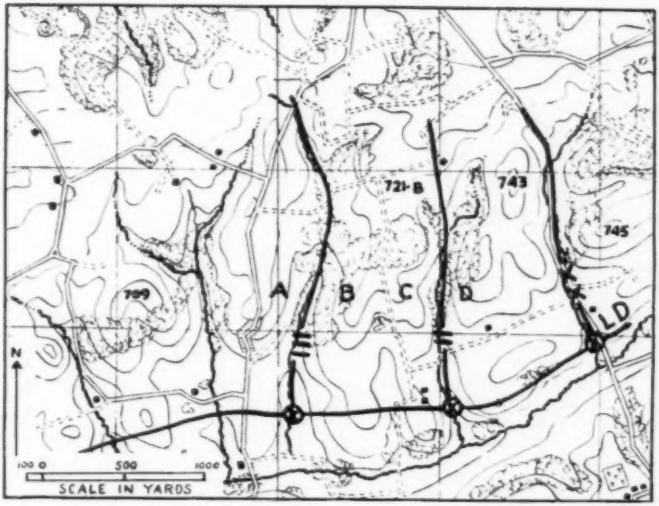


FIGURE 24.

ridge. The parts of the battalion advancing toward slopes B and C cannot see each other. Reserves may be used by the battalion on B and C, and the battalion's fire power can be concentrated on either one or the other, or divided between the two, but in no case can the parts of the battalion on slopes B and C be mutually supporting. The battalion has to carry on two more or less independent actions, separated by the ridge between B and C. One seeks to penetrate along the valley between A and B, the other to penetrate along the valley between C and D. The former requires the cooperation of the adjoining regiment on the left; the latter

requires the cooperation of the battalion on its right. Penetration along the valley between A and B is a threat to the defense of the ridge west of A and to the ridge between B and C. Yet, this penetration requires the cooperation of two regimental commanders and two battalion commanders. In case the penetration reaches the woods at B and the battalion commander wishes to reduce the ridge between B and C by a flank attack to the east, he can have the support of the friendly forces on the slope A only by arrangement with the commander of the regiment on his left. It is apparent that both in penetration along the valley between A and B, and in the flanking attacks against the ridges to the east or west, the capture of which is the object of the penetration, unity of command is broken and the battalion commander is handicapped in the use of his offensive powers by the character of the terrain assigned him as a zone of action.

In figure 25 the battalion has a different mission—the capture of both slopes of the valley between A and B. As the battalion advances, its observation is not broken into two parts as it is in figure 24. Any lack of observation to the front by the force on slope B can be supplemented by observation from forces of the same battalion on slope A. The battalion carries on a single, coordinated action, all phases of which are visible, either from slope A or from slope B. The battalion fire power on one slope can be used to aid the advance on the other slope. In this way the battalion is able to "shoulder" its way up the valley, concentrating its full power on enemy resistance on either slope A or slope B. Since the tactical handling of the penetration is under one commander, the penetration through the valley between A and B can be carried on more easily in this case than in figure 24. When the penetration reaches a point from which a flank attack may be made, the battalion can attack either the ridge west of A or the ridge between B and C, as required by the scheme of maneuver of the higher commander. An attack to the east can use the forces on slope A in support; an attack to the west can use the forces on

slope B in support. Either attack is conducted by one commander, who is able to concentrate his entire offensive power toward its accomplishment.

Coordination is not neglected, but it is effected in a different way than in figure 24. If the left battalion penetrates to the woods at B, makes a flank attack to the east and captures the ridge between B and C, such action greatly facili-

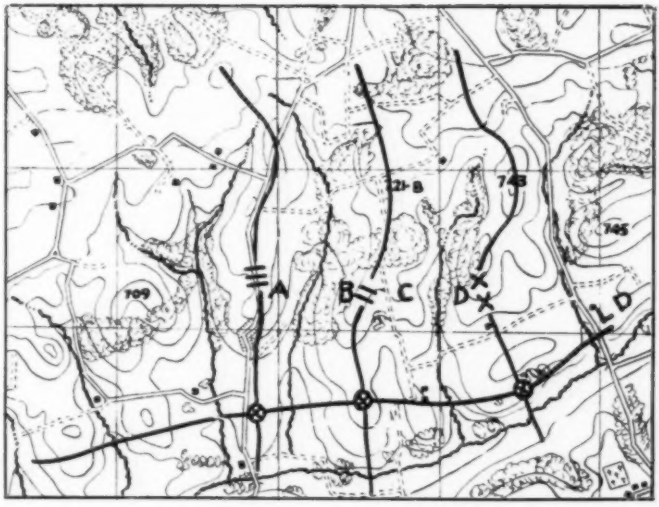


FIGURE 25.

tates the advance of the right battalion up the valley between C and D. If the flank attack is made to the west, the reduction of the ridge west of A aids the advance of the adjacent regiment on the left. The converse of both of these situations is also true. The right battalion may penetrate faster than the left and reduce the ridge between C and B, thus enabling the left battalion to advance more readily. In other words, the boundaries shown in figure 25 enable single commanders to achieve ends which result in cooperation with adjacent units; those shown in figure 24 require cooperation of effort on the part of different commanders in order to achieve the same results. The condition shown in figure 25 is obviously more desirable.

In figure 26 the left boundary of the battalion follows the same line as in figure 25; the right boundary follows a different ridge line. As a result, the operations of the battalion along the stream between A and B have the same advantages as in figure 25. In figure 26, however, the draw in the right of the battalion zone of action, is not visible from either slope A or slope B, so some of the disadvantages discussed under figure 24 are also present in figure 26. The

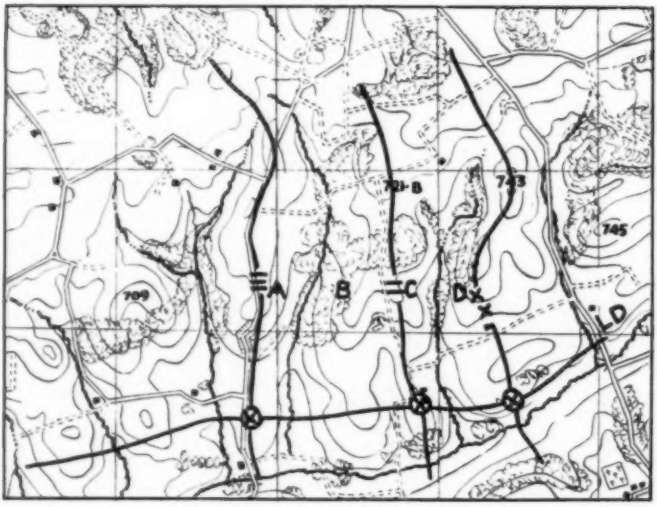


FIGURE 26.

boundaries shown in figure 26 are, therefore, more advantageous than those in figure 24, but not as advantageous as those shown in figure 25.

In figures 27 and 28 the boundaries follow neither the stream lines nor the ridges, but lie between the two. Analyzing them as we did those in figures 24 and 25, we find that they have some of the advantages of figure 25 but they also

FIGURE 27.

have some of the disadvantages of figure 24. Figure 27 is better than figure 28 because it enables the battalion commander to concentrate on one penetration, whereas figure 28 requires him to disperse his efforts over two penetrations.

Therefore, from the standpoint of the influence of terrain corridors on the ability of the battalion commander to coordinate his offensive powers to the best advantage, the five sets of boundaries would be rated in the following order of desirability: figure 25 (most favorable), figure 26, figure

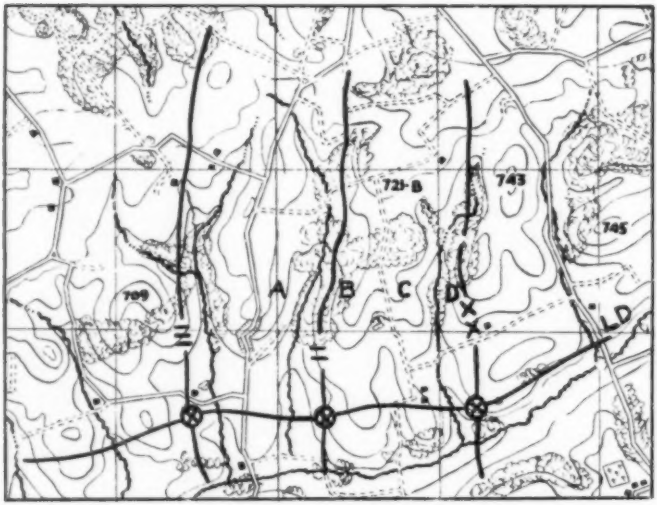


FIGURE 28.

27, figure 28, figure 24, with figure 25 showing a definite advantage over 26, a still greater advantage over 27 and 28, and a very decided advantage over 24, which is the least desirable of all.

B. Influence of the Terrain on the Ability of the Defense to Meet the Attack of the Battalion in the Most Effective Way.

We have just seen that figure 25, in which the boundaries in attack follow the boundaries of the terrain corridors, enables the battalion to use its force most effectively in attack. The battalion will make the best progress when its own effort is at its maximum and that of the defense at its minimum. Let us analyze the five sets of boundaries from the standpoint of the influence they may have *upon the effectiveness of the defense.*

In figure 24, if the battalion should make a deep enough penetration along the stream bed and the slope B to become a major threat to the defending force, the latter could bring additional fire to bear upon the spearhead of the attack from slope A. If a dangerous penetration is made along slope C, the defense can concentrate additional fire upon it from slope D. In other words, the defense retains a considerable degree of flexibility, which permits adjustment of its power to meet the threat of the attack as it develops. The attacking battalion must either disperse its fires to include targets outside of its zone of action, or arrange with the regiment on its left or the battalion on its right to neutralize the additional enemy fires. This, of course, can be done, but it involves a degree of coordination which is not easily accomplished in combat.

In figure 25, the boundaries of the zone of action follow the boundaries of the terrain corridors. This means that observation into the terrain corridor which includes the slopes A and B is limited on the west by the ridge immediately west of A, and on the east by the ridge between B and C. Hence, from beyond these boundaries, the defense cannot bring additional direct fire to bear upon the battalion. If the attacking battalion can overcome the enemy resistance within its own zone of action, it can continue to advance. This presents a decided advantage over figure 24.

In figure 26 the attacking battalion has the same advantages as in 25 in its penetration along the valley between A

and B, but conditions on the right are not so favorable because the southern portion of the ridge between B and C is visible from slope D, from which slope the enemy can reinforce his defensive fires in the event of a dangerous penetration along the right of the battalion zone of action.

In figures 27 and 28, as has been noted, the boundaries follow neither the drainage lines nor the ridge lines (terrain corridor boundaries). It is apparent from the foregoing discussion of figures 24 and 25 that the boundaries in figures 27 and 28 have some of the advantages of figure 25 but they also have some of the disadvantages of figure 24. They handicap the defense to some extent (a greater extent than figure 24) in its ability to reinforce its fires to meet the battalion's attack, but they do not handicap the defense nearly so much as do the boundaries in figure 25.

Therefore, from the standpoint of the influence of the terrain corridors in minimizing the flexibility of the defensive fires, the five sets of boundaries are evaluated as follows: figure 25 (most advantageous to the attack), figure 26, figure 27, figure 28, and figure 24, in the order named.

Since the boundaries shown in figure 25 indicate a decided advantage over the others, both in the enhancement of the offensive power of the battalion and in minimizing the flexibility of the defensive fires, the regimental commander, in his appreciation of the terrain, will assign to his left battalion the boundaries shown in figure 25. The same analysis applies to the boundaries of the right battalion, as well as to those of the regiment. In the latter case, the division commander is responsible for the choice of the boundary between his regiments; proper appreciation of the influence of the terrain will lead him to assign the boundary between regiments shown in figure 25 and figure 26 rather than one of the others.

It must be realized that ideal terrain corridors will not be available for *all* attacking units. If a corridor is suitable for assignment to a regiment and the regiment is to attack with two battalions abreast, each battalion will probably be assigned about a half of the large regimental corridor. In another instance, a corridor may be relatively narrow and

suitable for assignment to only a rifle company. Terrain should be studied initially from the viewpoint of the large units—divisions and regiments. If smaller corridors can be advantageously assigned to the subordinate units, full advantage should be taken of them; however, it will often be found that a corridor will fit the larger unit and subordinate units will have to be assigned terrain in accordance with the disposition of the larger unit. Small units such as rifle platoons should take advantage of any terrain which favors their advance. A large ditch or small ravine inside the main corridor assigned to a battalion may provide the avenue of approach for an entire rifle platoon. To carry the analogy further, the individual soldier should follow any small ditch or fold in the ground (a small corridor) taking advantage of all possible cover when advancing.

SUMMARY

1. Corridors afford more assistance to the attacking force than do cross-compartments, because corridors limit the flexibility of defensive fires and offer the attacking force an avenue of approach which facilitates infiltration and penetration.

2. In attacking through corridors, the terrain is used to best advantage when boundaries between units coincide with the boundaries of the terrain corridors. This statement is qualified as follows:

a. The width and direction of the available corridors will not always permit unit boundaries to coincide with the boundaries of corridors, especially in the case of smaller units such as rifle companies and platoons.

b. Exact coincidence of boundaries between units and boundaries between corridors will sometimes result in the division of a locality of tactical importance. This condition impairs unity of command and should be avoided. In such a case, the capture of the locality should be assigned to a particular unit, and the boundaries of that unit's zone of action should be so located as to include the entire tactical locality within its zone of action.

CHAPTER 5

Sniping—Past and Present

Sniping is one of the phases of military science to which the American soldier is particularly adapted. In the early days of colonization of this country, the white man learned through bitter experience the ways and wiles of the crafty Indian. To a large extent, the basic characteristics of the American Indian's method of fighting—stealth in movement, skill in woodcraft, and accurate fire delivered from covered and concealed positions—have been used by snipers ever since.

Earlier military tactics were primarily adapted to the open battlefields of Europe, where little or no advantage was taken of available cover. Opposing armies stood face to face and blasted each other with volley fire by companies and battalions. The individual infantryman did not single out his target; he merely pointed his musket in the general direction of the enemy and fired on command. If any of the enemy were hit, it was merely because a hail of lead fell upon a certain portion of the enemy position. By the rules and regulations a man had to stand up and take it. To seek cover or to lie prone was not considered proper or worthy of a good soldier. An exchange of tremendous volleys, followed by a quick charge with the bayonet while the enemy was reloading, was the simple formula for the success of infantry on the field of battle.

The campaign of General Braddock against the French at Fort Duquesne in 1755 taught the European armies that a well-armed, irregular force, fighting from tree to tree, was a match for the Grenadiers of His Majesty's Service. In fact, the blame for this disastrous defeat of the redcoats may be laid not upon General Braddock, but

upon the way in which he was trained. His concept of battle was built around trim, orderly ranks of red-coated soldiers, led by gallant officers on horseback, who moved forward and destroyed the enemy in a mechanical and orthodox manner. When his brave grenadiers were stricken down by the concealed Indians fighting for the French, he continued to use the European tactics to which he and his men were accustomed. As opposed to these tactics, young Colonel Washington leading his Virginia riflemen in the same campaign, took to the brush and trees and saved what he could of his army. These American soldiers were no match for His Majesty's troops on parade, yet when it came to fighting, they were supreme in pitting their wits and weapons against the Indians.

By "picking off" enemy leaders, and thus causing chaos among the enemy, the sniper first established himself as a military instrument of great potential value. Armed with weapons of extraordinary precision, these marksmen roamed the country within and behind the enemy's line, striking suddenly and mysteriously, and leaving a demoralizing number of victims along their trails.

An example of the far-reaching effect of the operations of a single sniper occurred just before the Battle of Saratoga, in the Revolutionary War. A part of the British forces were under the command of General Fraser, who was considered one of the ablest officers in the British army. His unit was attacked by American forces under command of General Daniel Morgan. After a short engagement, the British line was broken, and General Fraser began reorganization of his forces to the rear. General Fraser was seen, astride his horse, personally supervising this reorganization. General Morgan called for Tim Murphy, one of the most expert of the famous "Morgan Riflemen," and pointing out General Fraser, directed Murphy to remove him. Three carefully aimed shots from Murphy's rifle resulted in the mortal wounding of General Fraser. The confusion caused by this incident enabled the Colonial forces to encircle the British position and successfully attack it from the rear. The loss of this portion of the British position left General

Burgoyne no alternative but retreat to Saratoga, where he eventually was forced to surrender.

Thus, in the New World there began a great revolution in military science. Incidents such as the one cited emphasized the fact that individual marksmanship, as opposed to mass musketry, could win battles. This thought began to impress the minds of generals and the leaders of government. Throughout our history the American has been an individual fighter. The high degree of self-reliance and the skillful use of firearms engendered by the constant extension of our frontiers, have given him a heritage of adeptness in the use of the rifle as a sniping weapon. The pioneer boy grew up in an age when rifle marksmanship was a necessary part of his education if he were to survive. Moving silently and swiftly through the forests, he learned early in life to stalk game for food and to hunt down the marauding Indian who menaced the security of his home. In order to outwit the Indian, he dressed and acted like one; in order to outstalk and outshoot him, he learned his tricks and characteristics.

In all wars in which he has participated, the individual American rifleman has had a great influence. Legends of his prowess are part of our military tradition. Through all of our wars, including the present one, the American soldier has proved that the rifle is his weapon; that he has lost none of the skill of his forebears; and that he is peculiarly adapted to the important military art of sniping, which had its beginning in his own land.

Prior to the first World War, individual snipers were not employed on a large scale. During the Revolutionary and Civil wars there were regiments of riflemen and sharpshooters which possessed superior weapons and the skill to use them effectively. These organizations were usually assigned the mission of placing collective fire on critical points of the battlefield. While it is true that the superior marksmanship of organizations such as Morgan's Riflemen or Berdan's Sharpshooters was of decisive value

in certain instances, the effect was not immediately apparent throughout the military world in which volley fire by companies was still the usual method of combat.

The history of sniping during the period 1914-1918 followed, with minor variations, the general pattern set by the battle experience of the previous century. Combat intelligence and sniping became intermingled in the British army about 1914, when an officer was assigned to each rifle battalion as Intelligence and Sniping Officer. This was the first official recognition of the sniper's value as a highly trained observer.

Sniping was particularly effective during the static warfare of 1914-1917, when intrenchments of opposing units were sometimes separated by as little as 100 yards distance. In this situation the sniper's mission was to kill an enemy upon his slightest exposure to view. Morale, that all-important quality of effective fighting units, received a blow with each crack of the sniper's rifle. Men whose lives may be snuffed out by a hidden, crafty rifleman, live in uncertainty and dread. Unit morale is thus damaged and the unit's fighting spirit and aggressiveness are impaired by the enemy's consistent and effective sniping.

The best defense against sniping is counter-sniping, success of which will restore the morale of the unit which has been the victim. This defensive phase of sniping is a part of the sniper's regular job. To search out and eliminate hostile snipers is a constant task. To do this with any degree of success, the qualities of stealth, marksmanship, use of cover, intelligence, and the hunting instinct must be utilized to the utmost.

During the first World War, snipers usually operated in pairs (today they may operate in pairs, in groups, or singly), moving along the front line and setting up their sniper's post opposite points in the hostile line where prospective targets might expose themselves. In defensive operations of this kind, the clever sniper would use an improvised steel shield as part of the trench parapet, with

earth and sandbags as cover. An old shoe, a helmet, or a tin can was used to conceal the porthole made in the shield. Great care was taken not to change the appearance of the area. Alternate posts were installed along the line to permit the sniper to move to a new location. By firing, then moving to a new location before firing again, his chances of being detected by hostile observers were reduced.

This defensive phase of sniping, developed to a high degree of effectiveness during the first World War, is still used in defensive operations. The snipers work in pairs and operate an observer-sniper's post. Well-concealed and dug in, if possible, one member of the pair observes while the other is available at a moment's notice to fire upon any target selected by the observer. Using field glasses, the observer maintains a constant watch. Because this duty is quite tiring, it is necessary that the observer and the sniper exchange duties every 15 to 20 minutes.

Upon occupying an observer-sniper post, the first task

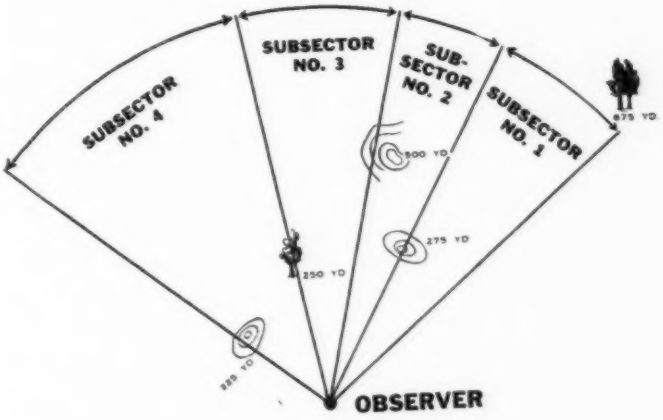


FIGURE 29.
Range Card for Use in an Observer-Sniper Post.

is to make a range card (See figure 29) covering the sector assigned to that post. The purpose of the range card

is to facilitate target designation and target location. Note that the entire sector to be covered is divided into subsectors having prominent landmarks as their boundaries. The subsectors are numbered from right to left. Using the range card, the observer, upon locating a target designates that target as follows:

"Range ..... (pause)
Left center of subsector No. 2
Rifleman at base of tree."

The observer, in designating the target, pauses after giving the range to allow the sniper time in which to set his sights before looking for the target.

During the present war, sniping has been used effectively by all the armies engaged, not only as a defensive measure, but also as a vital part of the attack. Aggressive, well-trained snipers now form part of attacking forces. At times these mobile snipers infiltrate the enemy positions. At other times, hiding along enemy routes of supply and communication, they seek out and destroy appropriate targets. By these tactics, the enemy's resistance is softened and his morale is seriously damaged.

When an attacking force has reached its objective and is reorganizing for a further advance, snipers may be sent to the flanks to seek the forming up places of hostile units preparing a counterattack, and with the mission of destroying the leaders of such groups before the counterattack is launched. This tactical employment of snipers has been used with marked success by the Russian army. Snipers can be used in maintaining contact with the enemy and keeping him under harassing fire. During an enemy withdrawal, snipers may be sent out with the encircling force with authority to move independently of that force. These snipers will seek the hostile rear and, by hit-and-run tactics, hamper enemy movements. Such action will increase to a great extent, the effectiveness of the encircling unit.

Successful employment of snipers in the attack is facilitated by certain types of terrain. Jungle terrain, with dense undergrowth and heavily crowned trees, is ideal for this type of sniping. Operating independently, the sniper may hide in the daytime and travel at night, seeking favorable positions near the location of prospective targets. He may continue on his mission indefinitely, utilizing captured weapons and foods, or living off the country. Or, he may return to his unit to replenish his ammunition and food. He is essentially a "free lance" and as such must possess the highest degree of resourcefulness, courage, stamina, decision, and determination. He must not be rash, but instead must carefully evaluate the effect of his activities upon friendly troops as well as upon the enemy. He must be able to differentiate between important and unimportant targets; he must know when to permit the lone enemy soldier to pass by unharmed and meanwhile, patiently await the arrival of a command group whose destruction will seriously impair enemy activity.

The man who performs this type of mission becomes a one-man raiding party, or a stalker-sniper. His work demands all of the skill of a sniper. Many splendid examples of the effectiveness of lone American stalker-snipers have come out of the Philippine campaign. It has been reported that during a two-week period in January, 1942, Captain Arthur W. Wermuth, one of the most famous of these stalker-snipers, spent more time behind the Japanese lines than in his own. His usual armament consisted of a submachine gun, two revolvers, and as many hand grenades as he could carry in his pockets and haversack.

On one occasion Captain Wermuth volunteered to burn an enemy-held village. Crawling through the enemy's forward position before dawn, with five gallons of gasoline, he scattered the gasoline behind the shacks where the Japanese were sleeping. He then threw a lighted match and fled. On another occasion, he organized a counter-sniping unit of 84 volunteers to eliminate an estimated 300 enemy snipers who had infiltrated the Ameri-

can position. Dividing the position into sectors and operating individually, the unit searched and cleaned out one sector each morning between daybreak and 0830. They killed approximately 250 enemy snipers and destroyed several enemy machine-gun positions by using hand grenades.

At times, the sniper may function under direct supervision, yet the final achievement of his mission will be solely the result of his own decisions and preparations for the crucial moment when he has his game in his sights. Only his skill, cunning, and ability will enable him to score. The sniper must dedicate himself to one supreme mission while in combat—the killing, by fair means or foul, of each enemy who exposes himself as a suitable target for rifle fire.

The following, quoted from "The American Rifleman," September, 1942, indicates that in the present war, long-range sniping has proved practicable:

> "Not all the sniper's work will be at short and mid-ranges. There are many types of terrain in Europe and in Asia where long range shots will be possible and tactically useful. Published photographs of enemy troops in action and reports from both United Nations and Axis sources prove this assertion. The crews of German tanks have consistently left the shelter of their vehicles to make repairs to damaged treads, in utter contempt of the possibility of being liquidated by long-range small-arms fire. In at least one reported instance, some unnamed Polish sniper disorganized a German tank group and delayed their forward progress for almost a half-hour by killing or wounding the entire crews of two German medium tanks when they exposed themselves to make exterior repairs. One of the men killed happened to be the Lieutenant in command of that particular tank group. This incident was reported by German, not Polish, sources, and was cited as evidence of the unsportsmanlike conduct of the Polish."

FIGURE 30.

The modern sniper has discarded many of the traditional traits of his trade. Among those discarded by the stalker-sniper is the idea that he should always be armed with a typical infantry rifle, improved by the addition of telescopic sights. While such equipment was adequate for the sniper's role in the past, and still is, for many of his targets, today the stalker-sniper often carries an automatic rifle or a submachine gun. For example, when infiltrating into enemy territory, situations may be expected which will require a burst of fire, rather than the carefully calculated and deadly aimed single shot of the sniper of former wars. Thus, small hostile groups may be stalked and eliminated by one man. Instances have been recorded where entire command groups, tank personnel, and small convoys (especially when halted) have been destroyed by a single sniper hidden along the route of communication. The sniper armed with a weapon of great fire power is especially effective against such targets as machine-gun crews, artillery details, and the personnel of forward motor parks and command posts.

Aside from a rifle, automatic rifle, or a submachine gun, a sniper's armament may also include grenades, pistols, and a limited amount of demolition equipment. Because of the nature of his area of operations, behind and on the flanks of the hostile force, he may have opportunity to perform acts of sabotage, destroying communication lines, small bridges. and other installations.

In the Malayan campaign, the Japanese used many fifth columnists as snipers. Dressed in civilian clothing, they were placed in hiding on their own familiar grounds, where they operated most effectively against Allied columns. Until such individuals are destroyed, they can impede the progress of a unit, especially one which is road bound with vehicular transport.

Another favorite Japanese method of operation is to locate snipers in trees. These individuals move at night and hide along the prospective route of advance of the opposing army. Strapped into their positions, armed with an automatic weapon, and supplied with concentrated rations, these men wait for hours until their target is within range. They

DON'T fire as soon as an enemy appears.
DO wait to see if he is accompanied by others, and get them all.

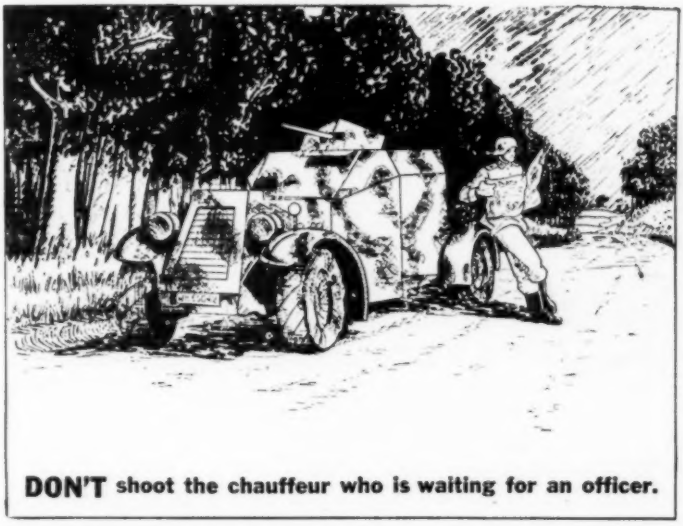
FIGURE 31.

often allow advance elements to pass in order to fire upon leaders whose death is worth the risk of revealing the sniper's position. Of course, such snipers are eventually destroyed because they cannot move from their positions without exposing themselves. Yet, in only a few minutes they can cause severe physical and psychological damage to any attacking unit. One of their tricks, as disclosed in the Philippine campaign, is to hang suspended from a tree in the sniper's harness as though dead. This ruse was soon discovered. In one case an American officer out of curiosity prodded such a sniper with a bayonet. He was rewarded with a yell—needless to say, the false corpse soon became a real one.

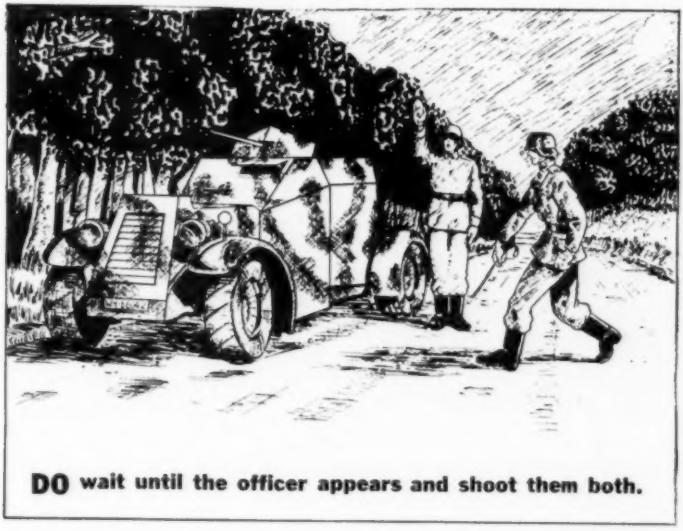
Methods of locating and removing enemy snipers depend upon the known habits of the enemy. American troops in the Philippine campaign improvised a new and successful technique in counter-sniping by means of which they removed many Japanese snipers who had hidden in trees. Upon locating an area thought to be infested with hostile snipers, a heavy machine gun was used to search and traverse through the treetops and lower branches where the snipers were believed to be located. While this method may seem unorthodox, it tumbled the Japs from the trees, killing some and exposing others, and enabled the riflemen to direct their aimed fire upon the grounded targets.

Another counter-sniping method was to detail four men to ride on top of tanks accompanying the column. Two of these men, using the antiaircraft machine gun mounted on the tank, searched for snipers located in trees. The other two men, armed with automatic rifles, dealt with snipers found on the ground. An officer who took part in the Philippine campaign reports that this method was effective and that there was always an ample number of volunteers for this dangerous assignment.

Some Japanese snipers employed a prearranged signal code consisting of native bird calls, and used this means of communication between snipers on the ground and in the trees. Such practice served, in some instances, to disclose their positions to our troops.



DON'T shoot the chauffeur who is waiting for an officer.



DO wait until the officer appears and shoot them both.

FIGURE 32.

The small-caliber (.256) Arisaka rifle with which many of the Japanese snipers in the Philippines were armed, has a characteristic report by means of which our troops were able to determine the general location of some of the snipers. The report served as a directional aid only. This rifle shows no flash or smoke when it is fired, so further search was usually necessary to locate the sniper even after his general location was established. Also, the mode of operation of most of the snipers was to fire only when firing was general, and the reports of individual rifles could not be distinguished.

Our U. S. Carbine, Caliber .30, M1, is admirably suited to this kind of sniping. Its length is well adapted to the sniper who takes a firing position in a treetop, and its accurate range, although shorter than that of other rifles, is sufficient to cover the comparatively short fields of fire obtainable in jungle areas.

Expert marksmanship is the basic characteristic of a successful sniper. Marksmanship, however, cannot be considered as the only required skill; expertness in scouting and patrolling is also necessary. Outdoorsmen, hunters, guides, and men who have lived in the open usually have good backgrounds for sniper training. This type of skill is often accompanied by expert marksmanship practiced in civilian life. Such a combination is characteristic of the most desirable basic material from which to train snipers. It must not be overlooked, however, that many city dwellers possess this combination of talent. Instances are recorded of city dwellers, particularly those who have been reared in the rough life of the waterfront and similar areas, who have become good snipers. Their experience in learning early to protect themselves and to match their wits with others of the same, hard school proved to be of value to them in this work. Dodging the corner "cop" may be a far cry from the battlefront, but basically, it requires the same skill in cautious, concealed movement as that used by the sniper.

What method of selecting men for sniper training shall we use among men who possess one but not both of these

DON'T fire at an approaching target at long range–

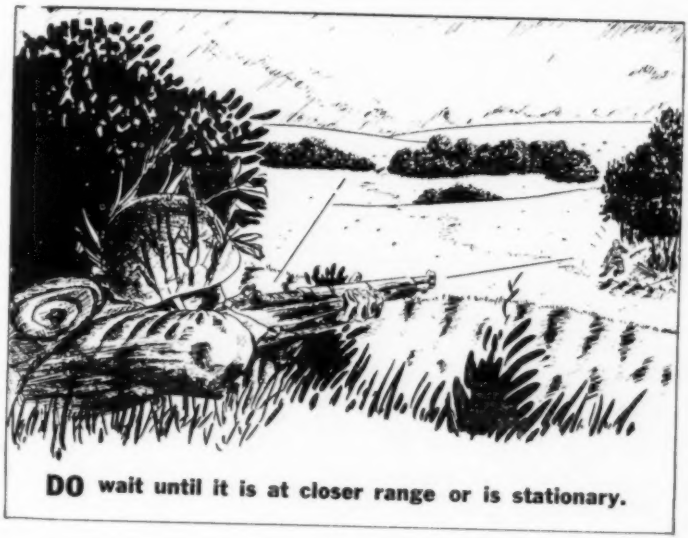

DO wait until it is at closer range or is stationary.

FIGURE 33.

characteristics? The method which appears to be most satisfactory is to begin with the most expert riflemen of the unit.

As an average, approximately 50 per cent of the men who begin sniper training will be eliminated by the time of completion of the course. Therefore, the original group should include about twice as many men as the number of trained snipers desired.

If sufficient volunteers for this training are found among the best marksmen of the unit, so much the better. Many of the characteristics which caused these men to qualify as expert riflemen were developed during previous experience as woodsmen, hunters, and stalkers. Similarly, the desire for adventure which caused them to develop those skills before becoming soldiers will cause them to volunteer for the specialized training of a sniper. The result will be that most of those expert riflemen who volunteer for this training will, to a large extent, be those best qualified for sniper training. If it appears that sufficient volunteers will not be available from this group, selected men should be detailed to take the course.

The following minimum requirements for qualification as a sniper are included as a guide in the selection of personnel for this vital duty. It will be noted that each of these requirements is a further development of basic training already received by these men. The qualified sniper must be:

1. An expert rifle shot.
2. An accurate range estimator.
3. A skilled observer.
4. Able to select advantageous firing positions.
5. Skilled in the use of concealment and camouflage.
6. Able to move silently through difficult terrain.
7. Skilled in the use of maps, aerial photographs, and compass.
8. Physically agile.
9. Physically hardened.
10. Able to sustain himself unaided for long periods.

The following steps in sniper training will serve as a guide in the development of skill and proficiency by means of a logical training sequence:

1. Advanced training in rifle marksmanship.
2. Eliminations based on shot groups fired at 300 and 600 yards.
3. Further training in range estimation under all conditions of visibility.
4. Training in selection of firing positions.
5. Training in observation and visual searching of areas under varying conditions of visibility.
6. Use of concealment and camouflage.
7. Training in selection of and moving by concealed routes.
8. Care of the telescopic sight.
9. Zeroing of the telescopic sight at 400 yards.
10. Study of trajectory, drift, and the effects of wind and light.
11. Known-distance firing with telescopic sight, to determine hold-off.
12. Firing at unknown ranges, using telescopic sight.
    a. Partly concealed targets.
    b. Concealed targets.
13. Final examination, involving use of a record course on terrain not previously used.

A sniper cannot afford to miss his target. If he fails to score a hit on the first shot, the enemy will remain under cover and the sniper will not have a second opportunity. Moreover, a single shot reveals the presence of the sniper and will often result in counter-sniping by the enemy and the removal of the sniper.

Expert marksmanship is therefore essential. For this reason, the first step in sniper training after the prospect has completed his marksmanship training, is the elimination of those men who do not meet the required standards. Since careful zeroing of rifles is necessary for bull's-eyes, at this stage of training eliminations should be based upon a careful study of the shot groups in connection with the firer's score book rather than upon total scores. For the purposes

of this advanced training, all we are interested in is consistent, accurate shooting as evidenced by the size of the shot groups. The entire group undergoing training should be allowed to fire on both the 300 yard and 600 yard ranges. Each man is provided with a good coach, and instructed to fire at will, five rounds at each range.

Elimination for poor shot groups should not be based on a rigid standard. If a man fires a poor shot group at 300 yards and an exceptionally good group at 600 yards, it is obvious that something other than his basic marksmanship has influenced his firing. He should not be eliminated without further opportunity to prove his skill.

As a general rule, the eventual goal of a sniper is a 300 yard shot group no more than 10 inches in diameter and a 600 yard group no more than 25 inches in diameter. This is based upon the fact that the face of a man is approximately 10 inches in diameter and that a man in the prone firing position presents a target approximately 25 inches in diameter. A sniper should be able to "pick off" an observer at 300 yards or a prone rifleman at 600 yards.

Those men who have failed to fire satisfactory shot groups are automatically eliminated from the class, and the remaining part of the class proceeds to the next phase of sniper's training—further practice in range estimation. The development of skill in range estimation for these men is largely a matter of additional practice under various conditions of visibility, because their basic training has previously taught them the fundamental principles of this subject.

The selection of firing positions for snipers is the next phase of training to be considered. This training consists of the selection of various suitable positions for the covering of certain areas. The men are told to select the most desirable position from which to cover each such area, and to evaluate each of the positions on the basis of:

1. General conspicuousness of the position.
2. Routes of approach to and withdrawal from the position.
3. Concealment from ground and aerial observation.

4. Duration of possible occupancy based upon change in light and shadows.

This work is highly important and should be given a considerable amount of time in the sniper's training schedule. Once the basic factors of this subject are instilled in the minds of the men, practical work can conveniently be given concurrently with other phases of training.

The next phase of training is to develop skill in visual searching of areas. Parallel lanes are marked on the ground to be searched. Targets which are to be located by the men being trained are then placed in concealed positions in each lane. The targets in each succeeding lane are progressively more difficult to find. Each man being trained is given a card similar to the range card used by the observer-sniper.

Standing at one end of the lane, he is told to search the lane in 100 yard strips up to 400 yards and locate "two men in fatigue clothes," or whatever target has been placed in that lane. When he finds the target, he is to mark its location on the card in his possession. He should search, first with the naked eye, then with his field glasses. The coach, knowing the correct location of each target, can time the man, and by looking at the card can check to see if he has actually located the target and accurately estimated the range to the target. A system of scoring the cards can be developed as a means of checking the progress of each man. When hiding men or other targets for this type of exercise, care must be used that they are not too well concealed. If they are concealed so thoroughly that they cannot be found, they will have no training value, and the men may become discouraged.

As the location of each target is made apparent, the instructor should explain the characteristics because of which that target should have been seen. Characteristics such as distinctive silhouettes and shadows should be emphasized.

Similar exercises involving the detection of movement of the target should be included.

Instruction in concealment and camouflage has already been introduced concurrently with instruction in the searching of areas, because these two subjects bear a converse

relationship to each other. By introducing targets of various degrees of obscurity, the value of different types of camouflage and concealment can be emphasized.

Use of concealment and camouflage includes practice in the selection of routes of movement, and in the use of those routes. Practical work in this subject plus practice in observation can be accomplished by dividing the men into small groups and having one man of each group move from one position to another while the rest of the group observes and evaluates his methods. Criticism and discussion of his methods will serve as instruction to the other members of the group. When, by rotation, it becomes his turn to do the practical work, each member of the group can apply this instruction.

A study of telescopic sights, including nomenclature, care, and use, is the next step in sniper training. This is followed by a study of trajectory, drift, and the effects of wind and light.

This work is followed by firing with the telescopic sight in order to obtain the correct sight adjustment at 400 yard range. Once the rifle is accurately zeroed at this range, the adjustment is tightened and is not changed unless the sight gets out of adjustment.

These studies are in anticipation of the next step—known-distance firing with the telescopic sight, to determine hold-off. The hold-off method of aiming is necessary when using the telescopic sight. The graduations on the scale of this sight are for purposes of adjustment only and do not represent specified ranges. Therefore, the rifle must be zeroed at a given range by the trial and error method. Once this zeroing is accomplished, the sight should be tightened and left in that position. If it should become loosened with use, the process of zeroing must be done again. As a result of experience and practice, a sniper should know that with this sight setting he must aim at a point a given distance above or below the point he expects to hit, depending upon the exact range to the target. (See figure 34.) A thorough knowledge of the proper amount of hold-off at various ranges is essential. Charts which will aid in this instruction

will be found in figures 34, 35, and 36. These charts can be drawn in large scale, or projected in an opaque projector to permit the entire class to see the chart.

YARDS	IF SCORE ZEROED IN AT 300 YARDS	IF SCOPE ZEROED IN AT 400 YARDS	
	THE STRIKE OF THE BULLET WILL BE		
100	6" HIGH	10" HIGH	12" HOLD OFF
200	6" HIGH	14" HIGH	
300	0	12" HIGH	
400	16" LOW	0	
500	40" LOW	20" LOW	
600	78" LOW	54" LOW	

FIGURE 34.

Chart showing location of strike of bullet as related to point of aim at stated ranges and sight settings.

Having learned the theory of hold-off, the prospective sniper must learn the practical application of the theory. He should practice firing by this method on known distance ranges until he is able to judge quickly and accurately the amount of hold-off necessary at various ranges.

After known-distance firing by this method, the next phase of training applies the same principles to unknown distance firing. This training should begin with firing at easily seen targets and should progress to firing at concealed targets. A sniping range should be constructed for this purpose. A sniping range comprises a series of scattered targets which can be individually raised and lowered by men in protected positions. Thus, the firer does not know where the target will appear, and he is forced to search the area, locate his target, estimate his range and hold-off, and aim and fire in the limited amount of time during which the target is exposed. In early stages of training, the target is exposed for several minutes. As the men gain proficiency, the length of time of exposure of the target is decreased.

The final examination of the sniper's training consists of movement of the sniper over an unfamiliar piece of terrain where targets upon which he is to fire appear momentarily. Standards of proficiency for qualification on such a course will vary widely depending upon the terrain on which the course is laid. The sniping range used for this purpose should consist of eight to ten target positions, but only five or six targets should be exposed to any one man being tested. Thus, conversation between men who have been tested and men to be tested will not reveal where the targets will be exposed.

An intensive, ten-day training schedule for snipers, is indicated below. This schedule is merely a suggested minimum and can be followed in case only ten days are available for this training. Actually, to produce well-qualified snipers this training should be preceded by additional work on the known-distance range, and the time devoted to each phase shown in the schedule should be expanded proportionately to use all time available for this instruction.

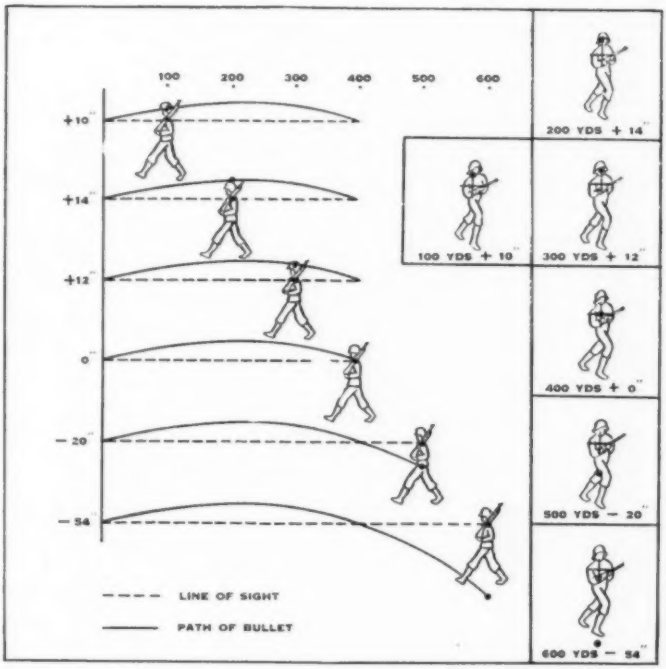


FIGURE 35.

For use in conjunction with figures 34 and 36 during instruction in the hold-off method of aiming. This figure is a graphic illustration of the information presented in figure 34, and is calculated on the basis of the old M2 ammunition.

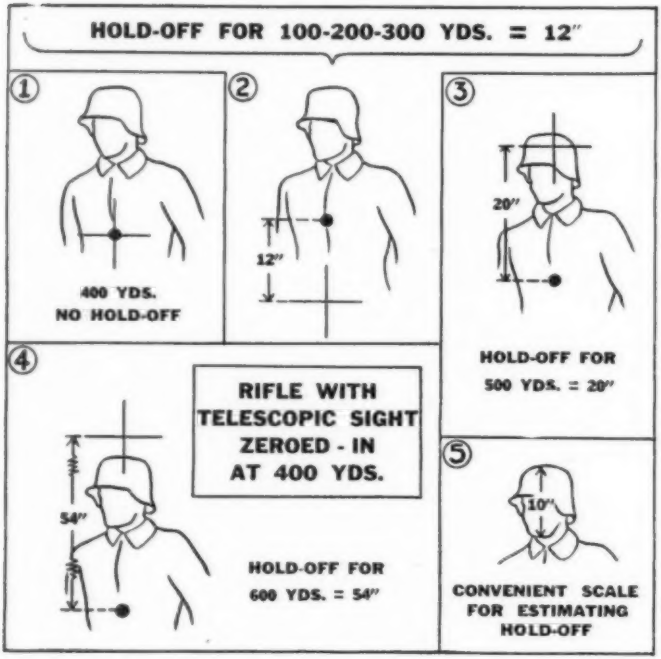


FIGURE 36.

For use in conjunction with figures 34 and 35 during instruction in the hold-off method of aiming. The crossed lines represent the crosshairs of the sight, and the dot represents the strike of the bullet. This figure illustrates the relationship of aiming point to strike of the bullet at various ranges and with the telescopic sight zeroed in at 400 yards range, and is calculated on the basis of the old M2 ammunition. The distance between aiming point and strike is the correct amount of hold-off.

A SUGGESTED 10-DAY SCHEDULE FOR TRAINING OF SNIPERS

Day	*A.M.*	*P.M.*
1.	Orientation, organization. Inspection of equipment.	Known-distance firing. Zero rifles and check technique.
2.	Firing shot group. Qualification 300-600 yds. Elimination.	Additional practice. Range estimation. Selection of firing positions.
3.	Seaching areas *a*. Exercises to develop speed. *b*. Exercise to develop patience.	Use of concealment and camouflage. Selection of and movement by concealed routes.
4.	Nomenclature, use and care of telescopic sights. Zeroing of rifles at 400 yards.	Study of trajectory, effects of wind and light. Known-distance firing with telescopic sights to determine hold-off.
5.	Known-distance firing for additional practice in hold-off, using obvious targets.	Same as A.M., but using concealed targets.
6.	Firing unknown ranges at obvious targets.	Same as A.M., but using concealed targets.
7.	Firing exercises involving selection and occupation of firing positions. Concealment and camouflage. Tree firing at concealed, fleeting targets. Dawn and dusk visibility. Searching areas for periods of varying length.	
8.	Same as 7.	
9.	Same as 7.	
10.	Final examination involving terrain not previously used. Final elimination of those who fail to qualify.	

CHAPTER 6

Troop Leading An Antitank Mine-Laying Unit

FOREWORD

The most recent Tables of Organization for the Infantry Regiment include no unit specifically charged with the laying and recording of antitank mine fields. Similarly, the most recent Tables of Equipment do not authorize antitank mines for any unit of the Infantry Regiment. The use of antitank mines by infantry troops, however, is contemplated in certain tactical situations. For this reason, all infantry units should be familiar with antitank mine-laying technique.

In a semi-stabilized defensive situation, as assumed in the following map exercise, the ammunition and pioneer platoon of a reserve battalion could be used to a considerable extent for mine laying.

Maps: Map A.

Situation: The Blue 1st Infantry, part of a larger force, has been ordered to defend the left (west) sector of a defensive position, part of which is shown on Map A (Figure 37). A part of the main line of resistance is to be established as indicated on Map A, and an outpost line has been established generally about 2,500 yards in front (northwest) of the main line of resistance. Security detachments are operating about 2,000 yards to the west, to protect the left flank of the regiment.

An enemy attack in force is not expected for four hours, but an attack by combat aviation or reconnaissance by his mechanized elements can be expected at any time.

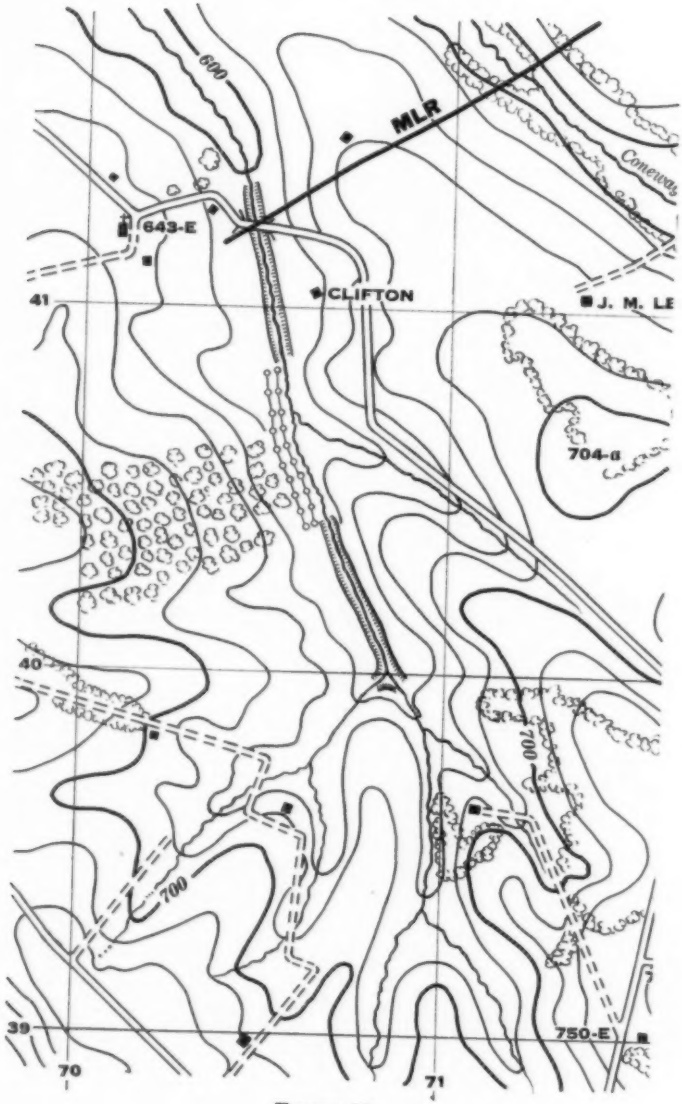
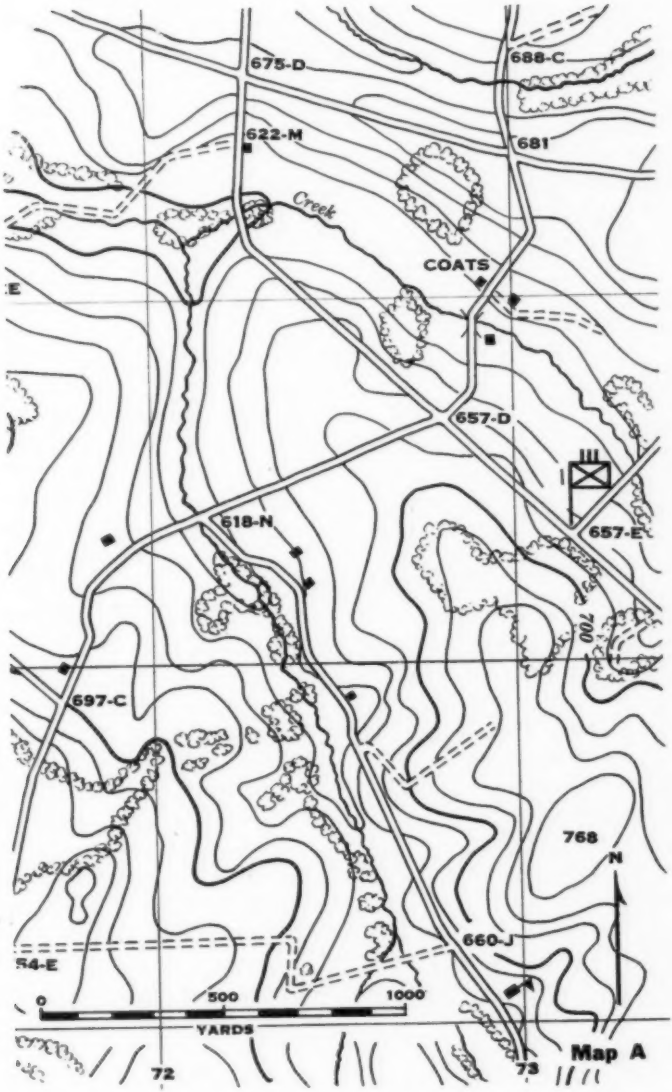

600
MLR
Conewa
643-E
CLIFTON
J. M. LE
41
704-6
40
700
700
39
750-E
70
71

FIGURE 37.


675-D
688-C
622-M
681
Creek
COATS
657-D
618-N
657-E
697-C
768
N
660-J
54-E
0
500
1000
YARDS
72
73
Map A

Ammunition and Pioneer Platoon, Second (reserve) Battalion, 1st Infantry, is in a covered position 1,000 yards to the southeast of RJ 657-E (73.1-40.3).

A messenger arrives in a ¼-ton truck and reports to the platoon leader, giving him the following message:

"Ammunition and pioneer platoon attached to regimental antitank company. Report at once to antitank company commander at southwest corner of woods on Hill 704-*a* for orders. Bearer of this message will guide you.

Jones
Comdg Hq Co 2d Bn."

First requirement: Actions and orders of the platoon leader.

A solution to the first requirement: The platoon leader informs his platoon sergeant, "This platoon has been attached to the regimental antitank company. I am going forward to Hill 704-*a*, about 1½ miles northwest of here, to meet the antitank company commander and receive orders. You take charge. As soon as I find out what we are to do, I'll notify you or return here myself."

Discussion of the first requirement: Before leaving the platoon area, the platoon leader should tell the platoon sergeant the situation, where he is going, and when, where, and how the platoon sergeant will receive further instructions.

Situation continued: The platoon leader, accompanied by the driver (messenger), moves in the ¼-ton truck toward Hill 704-*a*. They travel via the route, RJ 657-E—CR 657-D—RJ 618-N, then across country to the top of Hill 704-*a*, where they meet the antitank company commander.

After providing the platoon leader with an operation map similar to Map A (Figure 37) and acquainting him with the general situation, the antitank company commander continued—

"I have a mine-laying assignment for your platoon. Notice on your topographic map (Figure 37), the stream junction southwest of here (70.8-40.0). The banks of that stream, extending to a point about 450 yards downstream (northwest) from that junction, are steep enough to constitute a

natural antitank obstacle. From there, moving downstream, the banks are not so steep until you reach a point (70.5-40.8), about 150 yards north of the next stream junction, where the banks again become quite steep. The stream itself is fordable.

"You will establish an antitank mine field on the far (west) side of that stream between those two points to prevent enemy tanks crossing the stream into the regimental area. For your information, this mine field will form part of the antitank defense of the 3d Battalion, and antitank fires in this portion of the regimental sector will be coordinated accordingly.

"S-4 is sending two 1½-ton trucks and two 1-ton trailers loaded with 840 antitank mines and 1,500 feet of single-strand wire to the mine field area. They are to report to you near RJ 643-E (70.1-41.2) in 20 minutes. Those trucks and trailers with drivers, are to be attached to your platoon until further notice. Keep on hand a mobile reserve of at least 200 mines at all times.

"Three additional men will be attached to your platoon. Two men, equipped with an aiming circle and experienced in its use, are here now and can accompany you when you leave here. They can be used to survey the mine field location. The third man is a private who is experienced as a topographic draftsman. He will report to you at RJ 643-E with the trucks.

"Company K is to occupy, organize, and defend a defensive area on the left of the main line of resistance. Captain Company K has been ordered to detail riflemen to protect this mine field from enemy interference. Contact him concerning this as soon as you begin to lay mines.

"Antitank company command post will be near the regimental command post at RJ 657-E."

"Regimental ammunition distributing point is in the woods 950 yards northeast of RJ 657-E, near the road.

"Any questions?

"Move out."

Second requirement: Actions and orders of platoon leader, ammunition and pioneer platoon.

A solution to the second requirement: The platoon leader designates the senior of the men who are to use the aiming circle, as his surveyor and the junior as the assistant. With these men, he returns to his vehicle, and moves by the most direct route to the mine field area. While en route, he reconnoiters for a route of approach for his platoon.

Upon arrival at the mine field area, he instructs the surveyor, "You and your assistant unload your equipment here."

He then directs the driver of the ¼-ton truck, "Go to RJ 643-E (pointing) and meet the two 1½-ton trucks and trailers which are to report there. Lead them here. In moving here from RJ 643-E, follow that unimproved road, (pointing) for about 200 yards west of the church, then move across country to those thin woods (again pointing). Keep under cover of the woods, and move to the eastern edge. I will meet you there."

He assures himself that the driver understands these instructions, then dismisses him.

The platoon leader then reconnoiters for the exact location of the mine field, and indicates this location on the ground by having the surveyor's assistant drive stakes to mark points along the reference line of the mine field. He gives the topographic map of the area to the surveyor.

Discussion of second requirement: Before anything else can be done relative to laying the proposed antitank mine field, the platoon leader must reconnoiter the mine field area to establish the exact location where the mine field is to be laid. Therefore, it is essential that the platoon leader and the surveyors move promptly to the mine field area.

The trucks and trailers carrying the antitank mines will arrive at RJ 643-E soon, and must be met and guided to the mine field area. The route of entry of these trucks into the mine field area must be carefully selected in order that tracks leading directly to the mine field will not be made. Such tracks might be discovered on aerial photographs and would serve the enemy as evidence of activity in the area, even though the mines themselves will be buried and their locations camouflaged to prevent discovery.

The designation of the exact location of the mine field on the ground should be the first consideration of the platoon leader after he provides for meeting the trucks. Until this is done, there is little that the surveyors can do. Personal reconnaissance by the platoon leader is necessary to establish the exact location of the mine field.

The location of the mine field having been established, the surveyors can commence their work without further direction. They will need the topographic map in order to read the coordinates of the landmarks which they will use as reference points to record the location of the mine field.

Situation continued: The two 1½-ton trucks and two 1-ton trailers arrived, and the platoon leader directed that the trailers be uncoupled and the trucks unloaded. The trailers and antitank mines were placed under cover of the woods west of the mine field location.

Third requirement: Actions and orders of platoon leader.

A solution to the third requirement: The platoon leader prepares the following message to the platoon sergeant—

"Regiment establishing a defensive position. Do not expect attack for several hours. Enemy aircraft and mechanized reconnaissance forces are active.

"We are to lay an antitank mine field on regimental left flank.

"Bring platoon forward in these trucks to meet me.

"Driver will guide you."

He reads this message to the driver of the ¼-ton truck, and directs him, "Accompanied by these two 1½-ton trucks, you will report to my platoon sergeant who is with the platoon where you first reported to me. Give this message to my platoon sergeant. Guide him and the platoon to this area. Bring them over the same route we followed, but instead of leaving the road where we did, continue along the road to RJ 643-E (pointing) and follow the route by which you brought in the trucks."

The platoon leader assures himself that the driver understands these instructions, and dismisses him.

Discussion of third requirement: The platoon should be brought forward as soon as possible. The fact that an

enemy attack is not expected for several hours warrants the use of roads. This will permit greater speed by the platoon in its forward movement.

The platoon sergeant should be informed of the general tactical situation before he moves the platoon forward. The platoon's route into the mine field area should be carefully chosen in order that tracks visible from the air and leading directly to the mine field will not be made.

Instructions which the platoon leader gives the driver must either be simple enough to be remembered or must be written. In this case, there were five separate points in the message, as well as a route, to be remembered. Consequently, the platoon leader decided to write the message.

Situation continued: All mines laid must be protected against interference by the enemy. In this exercise, the unit laying the mine field has been relieved of this responsibility. However, for instructional purposes, assume that this unit is to protect the mine field which it is to lay. In view of this requirement, it would be necessary for the platoon leader to select positions from which the mine field could be protected by small-arms fire. Early selection of these positions is necessary in order that the men may have all possible time in which to perfect their defensive positions.

Fourth requirement: As platoon leader, indicate the general position or positions selected as a result of your reconnaissance from which enemy interference with this mine field can be prevented by small-arms fire.

A solution to the fourth requirement: The platoon leader would select positions on the nose (70.8-40.4) about 200 yards east of the southern end of the mine field, and on the smaller nose (70.7-40.8) west of the road and about 175 yards east of the northern end of the mine field.

Discussion of the fourth requirement: If the entire mine field could be covered by small-arms fire from one general area, control of the detail protecting the mine field would be facilitated. However, the length of the mine field indicates that it can best be protected from two locations. From each

of the two positions indicated, half of the mine field is well within small-arms range.

Fifth requirement: Actions of the surveyor and his assistant.

A solution to the fifth requirement: The surveyor reconnoiters for permanent landmarks which he can use as reference points in recording the mine field. While he does this, his assistant marks on the ground the trace of the reference line of the mine field as indicated by the stakes which were driven in accordance with the instructions of the platoon leader.

The surveyor and his assistant begin measuring azimuths and distances from points on the reference line to the permanent landmarks selected by the surveyor. They check each azimuth by measuring the back azimuth of the same line. These measurements are recorded in a notebook as they are made.

As soon as this information is recorded, the surveyor returns the topographic map to the platoon leader.

Discussion of the fifth requirement: The location of the mine field should be indicated by reference to permanent landmarks in the vicinity. These landmarks should be of such a durable nature that they will withstand battlefield violence. Culverts, road junctions, bridges, and stream junctions are the most desirable type of landmark for this purpose. Less desirable landmarks are buildings, isolated trees, isolated boulders, or stakes driven into the ground.

The task of recording the mine field location should be started as soon as possible in order that the surveyors will not interfere with the work of the mine-laying detail when they arrive.

An accurate record must be kept of distances and azimuths measured by the surveyors, since these data are the basis for the report and sketch of the mine field which must be transmitted to the commander of the regimental antitank company.

Situation continued: The platoon leader returns to the mine field site, and shortly thereafter the platoon arrives.

Sixth requirement: Actions and orders of the platoon leader.

A solution to the sixth requirement: The platoon leader directs drivers of vehicles to couple the trailers to the trucks and keep their vehicles under cover in the woods. All personnel are required to remain concealed. The platoon leader confers with the platoon sergeant and explains the details of the situation as follows:

"The enemy is not expected to attack in force for another three hours. His combat aviation and mechanized reconnaissance elements can be expected at any time. Our regiment is organizing the left (west) flank of a defensive position. The main line of resistance runs generally northeast and southwest and passes through this area at that bridge (pointing) about 800 yards north of here. An outpost line has been established about 2,500 yards in front of the main line of resistance. Security detachments are operating about 2,000 yards to the west to protect our left flank.

"We are to lay an antitank mine field as indicated by this trace marked along the ground. The mine field will be laid beside that part of the stream bed where the banks are not steep enough to prevent the passage of tanks.

"Put up a single-strand fence generally parallel to the east bank of the stream and no closer than 200 yards to the mine field to serve as a warning to friendly troops and vehicles.

"Get a mine-laying detail busy on the mine field and designate a two-man detail to erect the fence. Designate three men as a loading detail and have them report to me. I'll send them with one truck and trailer to go for additional mines.

"This mine field is to be protected from enemy interference by riflemen from K Company—the company which is organizing the left forward portion of the regimental area. I will contact the commander of Company K as soon as you have organized the mine-laying detail."

Discussion of the sixth requirement: The platoon, including the vehicles, must remain concealed whenever possible because of the threat of enemy aircraft and mechanized reconnaissance patrols.

The platoon sergeant must be thoroughly advised of the tactical situation and of the mission assigned the unit in order that he may intelligently assume command should the platoon leader become a casualty.

The location of the mine field is clearly indicated so that the platoon sergeant can start the mine-laying detail to work and supervise their activities.

A fence should be erected in order to provide adequate warning to friendly vehicles and troops which otherwise might cross the stream and move into the mine field.

The length of the mine field to be laid is approximately 500 yards. It is obvious, therefore, that with the required minimum density of 1½ mines per lineal yard, the platoon's initial supply of 840 mines will be sufficient to lay this mine field. The antitank company commander directed that a reserve supply of at least 200 antitank mines be maintained at all times, however, for emergency use. The completion of this mine field will not leave this supply intact. Therefore, provision must be made for immediate replenishment of mines.

Situation continued: The driver of one of the trucks reports to the platoon leader that the platoon sergeant has designated a three-man loading detail and has directed that he and this loading detail report to the platoon leader.

Seventh requirement: Orders of the platoon leader.

A solution to the seventh requirement: "The regimental ammunition distributing point is in the woods 950 yards northeast of RJ 657-E (indicating the road junction on the map). Report there and ask for 150 antitank mines. They will either give them to you or tell you where you can get them. After you get the mines, return to the woods southeast of the regimental command post where you and the other truck driver first met the platoon. Put your truck and trailer under cover in the woods and wait for further instructions. When you leave here, move along the edge

of these woods about 500 yards and cross to the road over the same route you used coming in." He assures himself that these instructions are understood by the driver, and dismisses him.

Discussion of the seventh requirement: Instructions to the driver of this truck must be explicit. Additional antitank mines are obtained by sending a vehicle and loading detail to the regimental ammunition distributing point, where the regimental munitions officer will arrange for the required number of additional mines, usually by sending the vehicle on to the division supply point.

The platoon leader will report to the antitank company commander when his task is completed. In the absence of other instructions, he will report to the antitank company command post. The antitank company commander probably will send the platoon to its original position southeast of the regimental command post. The driver is familiar with the woods southeast of RJ 657-E where he first met the platoon, and can wait there.

Again, care must be exercised to avoid making tracks disclosing the location of the mine field. Hence, specific instructions should be issued concerning the route to be taken in moving from the mine field area.

Situation continued: The mine-laying detail, under supervision of the platoon sergeant, begins laying the mine field as indicated by the trace of the reference line. The platoon leader moves to the area of Company K. He contacts Captain Company K, informs him of the exact location of the mine field, and agrees to notify Captain Company K as soon as the mine field is completed.

The platoon leader then returns to the mine field site. He quickly checks the measurements which have been recorded in the surveyor's notebook. (Figure 38.) The topographic draftsman then prepares the mine field report from the information recorded in the surveyor's notebook.

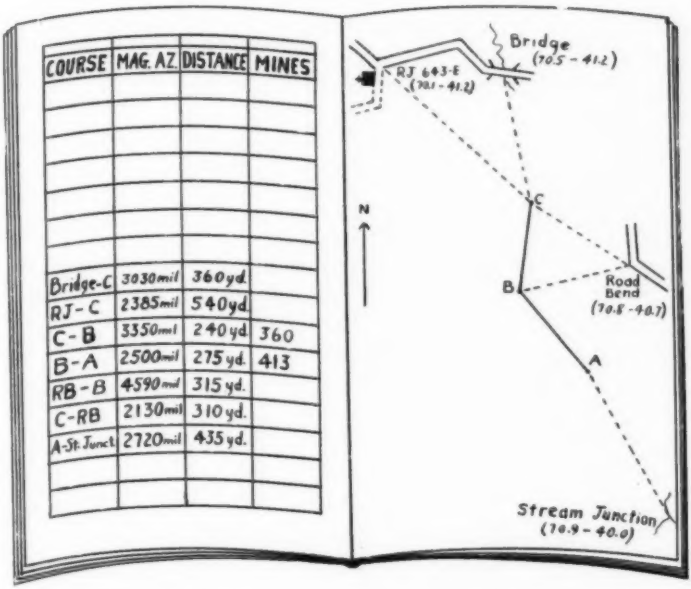


FIGURE 38.

Surveyor's notebook, showing information from which mine field report is to be made.

Eighth requirement: You are the topographic draftsman. From Map A (Figure 37) and the information shown in the surveyor's notebook (Figure 38), prepare a report and sketch of the location of the mine field.

(Assume a total of 1½ mines per lineal yard of the mine field. Actually, the topographic draftsman would ascertain the number of mines laid by counting them as they were laid.)

A solution to the eighth requirement: See Figure 39.

Discussion of the eighth requirement: A mine field report should contain the following information:

a. A sketch of the reference line of the mine field showing at least one and preferably more than one tie-in to prominent topographical features appearing on maps or photomaps of the vicinity. Other topographical features may be shown which will assist in identifying the field in the future. The magnetic azimuth and length of each section of the mine field are shown on the sketch.

b. A record of the number of antitank mines in each section of the sketch and of the total number of antitank mines in the mine field.

c. A large scale diagram of the *pattern* in which the mines are laid. It will be noted that the pattern shown on the solution meets the requirement that antitank mine fields, to be effective, must be laid with a density of at least 1½ mines per lineal yard of mine field.

d. An arrow indicating magnetic north direction.

e. The graphic scale of the sketch.

f. The organization laying the mine field.

g. Date the mine field was laid.

h. Topographical map used as reference.

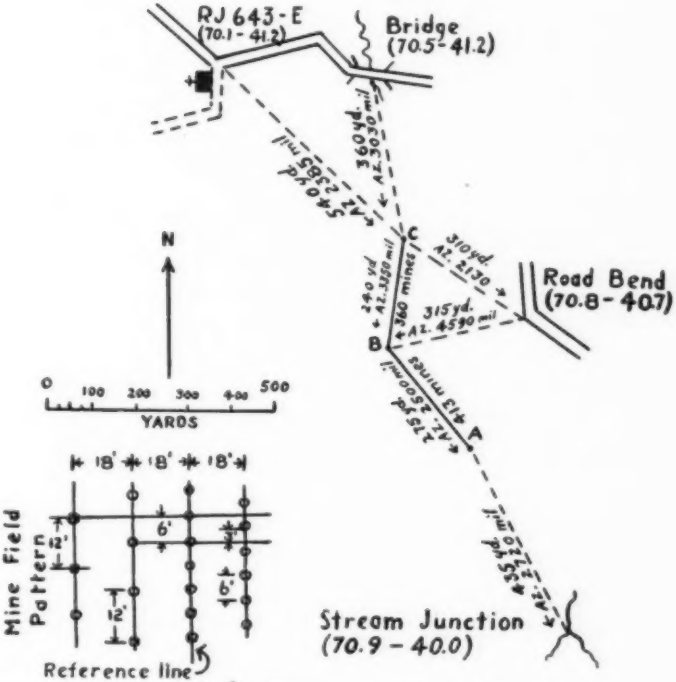
i. Signature of officer in charge of the laying of the mine field.

Situation continued: The mine field report is completed in triplicate.

Ninth requirement: What disposition should the platoon leader make of these three copies?

Report: Location of Hasty Mine Field

1. Organization 1st Inf.
2. Date Jan 19, 1943
3. Reference Map Map A
4. Number of mines laid 773
5. Sketch



John Doe Signature of Officer

2d. Lt. 1st Inf. Rank and Organization

10 miles east of Jonesville Place

FIGURE 39.

A solution to the ninth requirement: All three copies will be turned in at the antitank company command post. One copy is retained by the antitank company. The other two copies are forwarded to regimental headquarters. This headquarters retains one copy and forwards the other to division headquarters.

Discussion of the ninth requirement: The antitank company's copy of the report is to assist the unit which, under supervision of that company, may be required to locate and recover unexploded mines after the mine field has served its purpose.

The copies forwarded to regimental and division headquarters are to ensure proper recording of the mine field location in order that friendly troops may be warned against moving into the mine field.

Situation continued: The platoon sergeant reports that the mine field is completed.

Tenth requirement: Orders of the platoon leader.

A solution to the tenth requirement: The platoon leader tells the platoon sergeant, "I will make a final check of the mine field area to be sure it is thoroughly policed and that our mines are carefully concealed before we leave here.

"Our other truck has gone after more mines, and I told the driver to return to the small woods where we parked before we moved up here.

"After I complete the final check, you will move with this truck and trailer to those same woods (1,000 yards southeast of RJ 657-E), where I will meet you and give you further instructions. You will not be able to move the entire platoon in one trip. Move as many men as possible, and have the remainder start on foot. Then send the truck back to pick them up along the road.

"As you leave here, move west along the edge of these woods for about 500 yards, then north to the road over the same route you used in coming in.

"I will move cross-country to the area of Company K on the other side of the stream, and notify Captain Company K that the mine field is completed.

"Then I'll report at the antitank company command post. After that, I'll rejoin the platoon."

Discussion of the tenth requirement: Care is necessary that no debris or other evidence of mine-laying activity in the area is left near the mine field. Concealment of the mines must be checked from all angles of approach. This is a responsibility of the platoon leader.

The troops who are to protect the mine field must be notified when the mine field is placed under their protection. This is also a responsibility of the platoon leader.

Situation continued: The platoon leader then makes a final inspection of the mine field area, gives instructions for minor changes that are needed, and leaves the mine field area in the ¼-ton truck.

Eleventh requirement: Further actions of the platoon leader.

A solution to the eleventh requirement: The platoon leader goes to the antitank company command post and reports the completion of the mine field and the disposition of his platoon. He then leaves the mine field records. Next, he goes to the platoon area, checks equipment and the measures taken for concealment, and awaits further orders.

Discussion of the eleventh requirement: The antitank company commander must be advised at the earliest possible time of the completion of the mine field and the disposition of the ammunition and pioneer platoon in order that he may know of their readiness to perform any other required tasks.

Situation continued: Soon after the platoon is disposed in the covered position designated by the platoon leader, the truck and detail who went after the 150 additional antitank mines arrive, and are similarly disposed in the vicinity. Shortly thereafter, a messenger arrives and gives the following message and sketch to the platoon leader:

"Prepare antitank mine road blocks at each end of the regimental train bivouac area and across the road leading to that area from the south. Approximately 100 mines will be required. Complete these road blocks upon approach of

enemy mechanized vehicles. No longer necessary to maintain reserve of 200 mines. Train bivouac area is four miles southeast of regimental CP, along road running past your present position.

Brown
Comdg AT Co., 1st Inf."

(See figure 40 for sketch.)

Twelfth requirement: Actions and orders of the platoon leader.

A solution to the twelfth requirement: The platoon leader shows the platoon sergeant the message and sketch, and tells him, "With the ¼-ton truck and driver, I am going to the regimental train bivouac area to reconnoiter the sites of these road blocks.

"As soon as possible, send a truck and trailer with 100 antitank mines and one squad (eight men) to the road junction at the south edge of the regimental train bivouac area (indicating this point on the sketch). I will meet them there. The regimental train bivouac area is about four miles southeast of RJ 657-E, along this road (pointing). You stay here with the rest of the platoon. I'll return after I've placed these men and given them instructions."

Discussion of the twelfth requirement: The platoon sergeant must be made familiar with the mission assigned, in order that he may intelligently assume command of the platoon should the platoon leader become a casualty.

The exact location of each of these road blocks must be decided by the platoon leader. Personal reconnaissance is necessary to make this possible.

The platoon leader can move to the train bivouac area, report to the commanding officer there (service company commander), quickly reconnoiter the road block sites, and return to the road junction at the south edge of the bivouac area during the time the squad is loading the 100 antitank mines and moving to the train bivouac area with the 1½-ton truck and trailer.

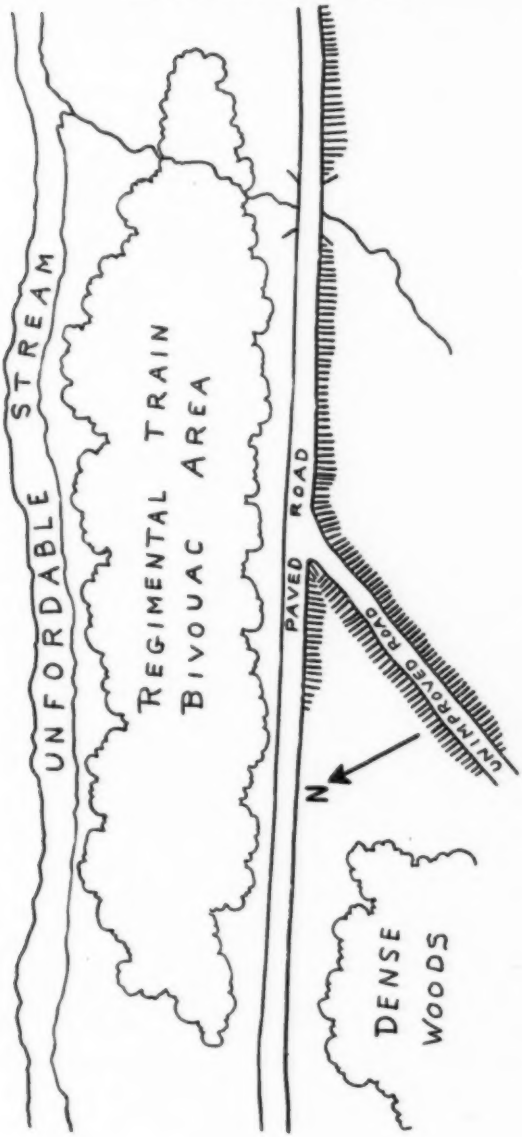

UNFORDABLE STREAM
REGIMENTAL TRAIN
BIVOUAC AREA
PAVED ROAD
UNIMPROVED ROAD
N
DENSE WOODS

FIGURE 40.

Eight men should be sufficient to place these road blocks and protect them from removal by the enemy.

Situation continued: The platoon leader, with the ¼-ton truck and driver, moves to the regimental train bivouac area. He reports to the commanding officer of the train bivouac area and informs him of his orders. The commander of the train bivouac area instructs him to proceed in accordance with the instructions contained in the message he received, and to report again to him (commander of the train bivouac) as soon as provisions for these road blocks are completed.

He advises the platoon leader further, "Air-antitank guards, part of the train bivouac's warning net, are located along each of the roads you are to prepare to block. Each of these observers is 500 to 600 yards out from the general area where your road blocks will be. Instruct your men to place their road blocks upon signal from these observers. I will arrange for food and relief, if necessary, for your men."

Reconnaissance of the road block sites shows the terrain immediately surrounding each of them to be as indicated in figure 41.

Thirteenth requirement: As platoon leader, indicate the correct location, in terms of a line between letters on the sketch (Figure 41), of each of these road blocks. Indicate, in terms of individual letters, the positions from which small-arms fire should be placed upon each of these road blocks to protect it from removal by enemy foot troops.

A solution to the thirteenth requirement: BL, PS, and KX. These should be protected from C, F, and J respectively.

Discussion of the thirteenth requirement: Road blocks are effective only if placed at points in and along the road where detours are impracticable. Such localities are known as tank defiles. When narrow defiles are selected as road block sites, only a relatively small number of mines is required. Road blocks should be placed well away from the area to be protected. They must always be covered effectively with small-arms fire to prevent their removal by enemy foot troops. The positions selected from which

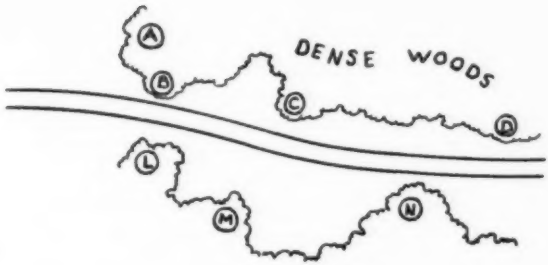


Fig ①

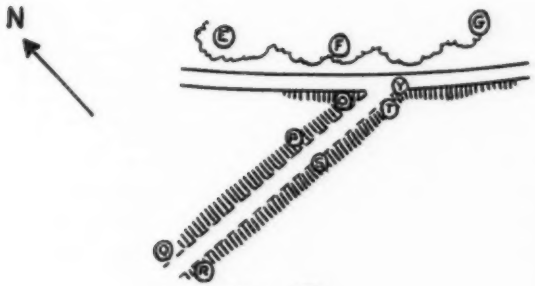


Fig ②

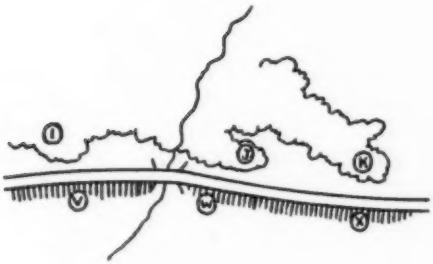


Fig ③

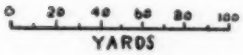


FIGURE 41.

road blocks are to be covered by small-arms fire must afford a clear field of fire and concealment for the troops occupying them. These positions must be near enough to the road block to permit quick occupation of the positions after establishment of the road block.

In figure 41①, BL was chosen because it is well away from the bivouac area, because it can be covered by small-arms fire from positions near-by, and because the proximity of the woods to the road means that fewer mines need be used in the road block.

In figure 41②, PS is the best choice for a road block site since OT is too close to the bivouac area, and QR cannot be covered effectively as PS by small-arms fire from the woods north of the road.

In figure 41③, KX is chosen as the site for the road block principally because it is well away from the area to be protected. All of the potential road block sites in this figure can be readily covered by small-arms fire.

Situation continued: The platoon leader measures, by pacing, the width of each defile in order to ascertain the exact number of mines which will be needed for each road block. The width of each of these defiles is:

BL	21 yards
PS	8 yards
KX	18 yards

The platoon leader next contacts the air-antitank guard near each of the road block sites and informs him where the road block will be placed upon his signal. He then returns to the road junction just south of the regimental train bivouac area and meets the 1½-ton truck and trailer carrying the one squad and 100 mines.

Fourteenth requirement: Actions and orders of the platoon leader to provide for the placing of these road blocks.

A solution to the fourteenth requirement: The platoon leader informs the leader of the squad that the squad is temporarily attached to the train bivouac commander, and outlines the situation to the squad leader. The platoon leader

guides the group to B, (see figure 41①) and directs the unloading of 32 antitank mines. He selects three men, designating one of them as leader of the detail. He instructs the leader, "Lay and camouflage a road block from the edge of the woods on each side of the road, to the road, but not across the road itself. Place guards to prevent friendly troops and vehicles from running into these mines. Upon signal from that observer (pointing to the air-antitank guard) that enemy vehicles are approaching, you will lay mines to form a road block across the road itself; then you and your detail will retire to C (indicating point C on the ground) from where you will prevent, with rifle fire, the removal of this road block by the enemy."

From this location, the platoon leader guides the squad, less the three men left at the first road block, to the site of the second road block. (See figure 41②.) At this location he selects two men, one of whom he designates as leader. He directs the placing of 12 antitank mines beside the road at P or S, and instructs the leader of the two-man detail as follows: "Stay here beside these mines. Upon the signal of that air-antitank guard (pointing) that enemy vehicles are approaching, you will place and camouflage a road block across the road at this point. Then, you will retire to those woods (pointing to F) from which point you will prevent, with rifle fire, the removal of the road block."

With the remaining two men and the squad leader, the platoon leader then moves to the position he had selected for establishing the third road block (see figure 41③). He directs the unloading of 27 antitank mines on the north side of the road, and instructs the squad leader as follows: "Lay and camouflage a road block from the edge of those woods (pointing to the woods to the north) to the north edge of this road. Place men to guard these mines and prevent friendly troops and vehicles from running into them. Upon the signal of that air-antitank guard (pointing) that enemy vehicles are approaching, you will lay a road block across the road and to the edge of the embankment on the south side of the road. After that, you and your men will retire to those woods (pointing to J) from where you will prevent,

with rifle fire, the removal of this road block by the enemy.

Discussion of the fourteenth requirement: Road blocks made with antitank mines are usually laid with a density of 1½ mines per lineal yard of width of the defile they are to close. On this basis, the platoon leader establishes the number of mines to be unloaded at each of the road block sites.

The roads must be left open for use by friendly troops and vehicles for as long as possible; yet upon appearance of enemy vehicles, they must be closed without delay. Therefore, in the case of the first and third of these road blocks (Figures 41① and 41③), those parts of the defile other than the road itself can be closed immediately. In the case of the second road block (Figure 41②), the road itself constitutes the entire defile, so none of it can be closed until enemy vehicles appear.

The mines laid initially at the first and third road block sites must be guarded to prevent friendly troops and vehicles from accidentally running into them.

The leader of each of these road block details must be given explicit instructions concerning where and when the road block is to be established, and the position from which small-arms fire is to be delivered to protect the road block against removal by the enemy.

Situation continued: The platoon leader directs that the truck and trailer be moved to a covered position near the location of the first road block (B-L), while he makes a final inspection of each of the road blocks for which he has made provisions.

Fifteenth requirement: Further actions of the platoon leader.

A solution of the fifteenth requirement: Accompanied by the squad leader, the platoon leader reports to the commander of the regimental train bivouac (service company commander) that provisions for these road blocks have been made and that the road blocks will be completed upon signal of the air-antitank guards who are protecting the train bivouac. The squad leader returns to his post near the third road block. The platoon leader returns to the area

of the first road block, and accompanied by the truck and trailer, rejoins the remainder of his platoon.

Upon arrival thereat, he reports to the antitank company commander that provisions for establishing the road blocks have been made, and informs him of his platoon's disposition and state of supply.

Discussion of the fifteenth requirement: The commander of the regimental train bivouac should be notified as soon as the provisions for the establishment of the road blocks are completed. This is necessary in order that he might be informed of the degree of antitank security of his command.

The squad leader accompanies the platoon leader and reports to the commander of the train bivouac in order that that officer, to whose command the squad has been attached, might give the squad leader whatever special instructions he might wish.

The platoon leader should return to his platoon area as soon as possible in order to be available if proper authority assigns other missions for the platoon to perform. He should report his platoon's disposition and state of supply in order that the antitank company commander may know the capacity of the platoon for accomplishing other tasks.

CHAPTER 7

Foreign Map Reading

GENERAL

United States Army operations in foreign lands are based to a large extent upon maps prepared in other countries. It is obviously impossible for any one person to have a thorough knowledge of the maps produced by all nations. A preliminary examination of types of maps produced by our allies and our enemies, however, will serve as an introduction to point the way to further study of the maps which one will encounter when assigned to a theater of operations.

A thorough knowledge of Russian or German maps would be of little value to anyone operating in the Pacific theater of operations. Similarly, a thorough knowledge of Japanese maps would be of little value in the European theater of operations. For this reason, only a general knowledge of foreign maps is needed by the average soldier. When a particular theater of operations is indicated for a given individual, he should prepare himself by learning in greater detail the peculiarities of the particular foreign maps which he will probably encounter in that theater.

AMERICAN REPRODUCTION OF FOREIGN MAPS

The engineers of our Army are responsible for the preparation and procurement of maps of foreign areas. They operate the Army Map Service and such other facilities as are necessary to ensure the proper collection, cataloging, storage, compilation, reproduction, and distribution of such maps. The distribution will be to forces in the zone of the interior and to field forces for initial operations. Figure 42 is a section of a French map provided by this source. It is reproduced to a scale of 1:50,000 and, therefore, covers only a small area (about 33 square miles).

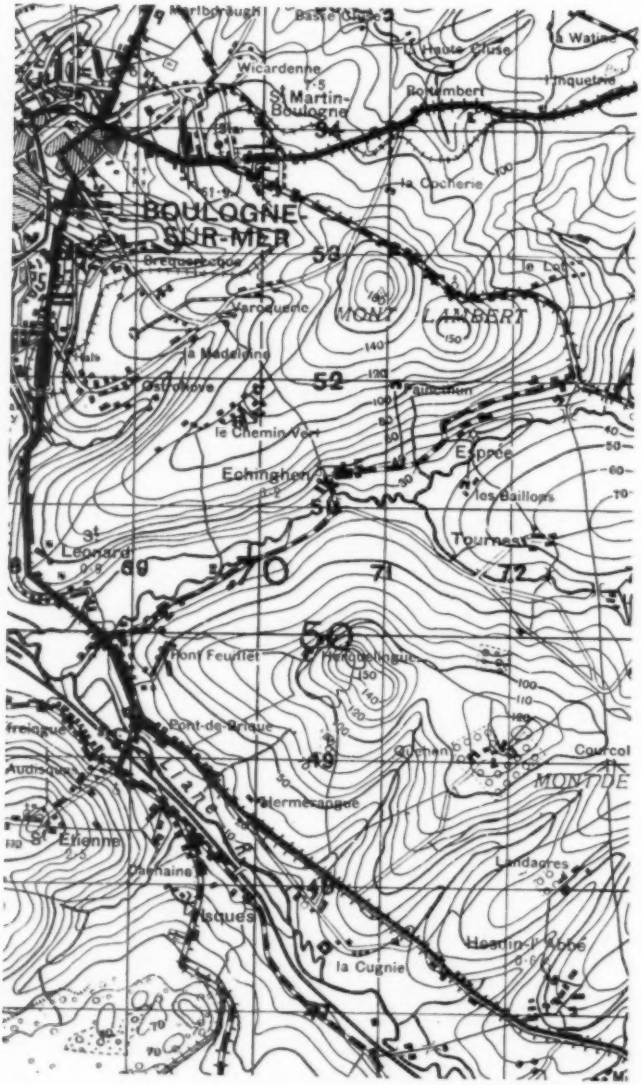
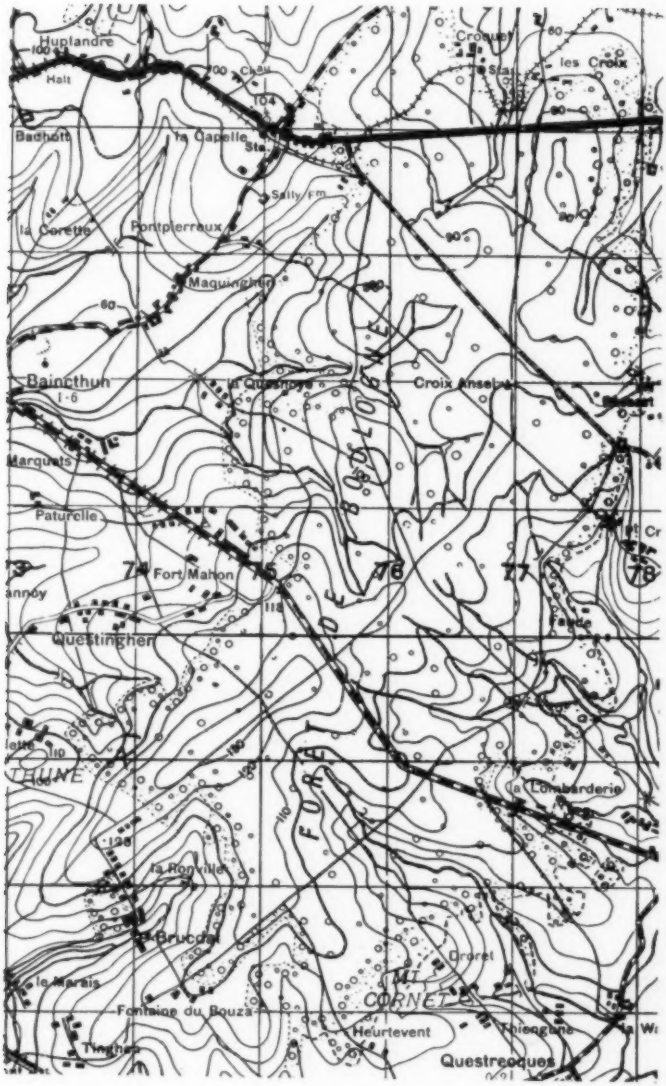

Marlborough
Basse Ville
Wicardenne
St Martin-Boulogne
Haute Cluse
Rocambert
la Cocherie
BOULOGNE-SUR-MER
Brequerecque
Capécure
MONT LAMBERT
la Madeleine
Outreau
le Chemin Vert
Echinghen
Espree
les Baillons
Tournesis
St Leonard
Pont Feuillet
Pont-de-Brique
Courcol
MONTOE
St Etienne
Chemin
Isques
la Cugnie
Landacres
Hoanin-l'Abbé

FIGURE 42.


Hupiandre
Halt
Bachoit
la Capelle
Sta
Sally Fm
la Corette
Pontplerraux
Maquinghen
Bainethun
la Quesnoye
Croix Anselme
Marquats
Paturelle
Fort Mahon
Questinghen
THUNE
la Ronville
Bruc
le Marais
Fontaine du Bouza
Tingues
Heurtevent
CORNET
Ororet
la Lombarderie
Questrecques
Croquey
les Croix

Maps taken from foreign originals and reproduced by The Army Map Service usually include, as marginal data, sufficient information to permit interpretation of the map by anyone having a general knowledge of our own maps.

Figures 43 and 44 show a reproduction of the marginal data on the map of which figure 42 is a part. The conventional signs shown are obviously incomplete, but are sufficient to permit general interpretation of the map. The map number and year of publication by the Army Map Service are included for reference. The scale, shown as a representative fraction and also in words and figures, is understandable to anyone familiar with our own maps. The graphic scale, as shown in meters and kilometers, is typically European; but the graphic scale graduated in yards and miles is the same as that used on American maps. When these familiar units of measurement are not given, the map reader can facilitate his interpretation of the scale by measuring with the metric scale and converting the kilometers and meters to miles and yards. To convert kilometers to miles, multiply the number of kilometers by .62, or by 5/8. To convert meters to yards, multiply the number of meters by 1.1.

The contour interval shown is self-explanatory and can readily be converted to yards or feet for use in the same manner as our own contour intervals.

The grid reference enables one to locate the area shown, in terms of latitude and longitude. In this reference, the unit of measurement, grad, is a French unit equal to .9°.

The chart showing incidence of grid letters refers to the location of this area in terms of the Modified British Reference System which is explained in another part of this article. This chart also applies as an index to adjoining sheets in the same manner as similar charts on American maps.

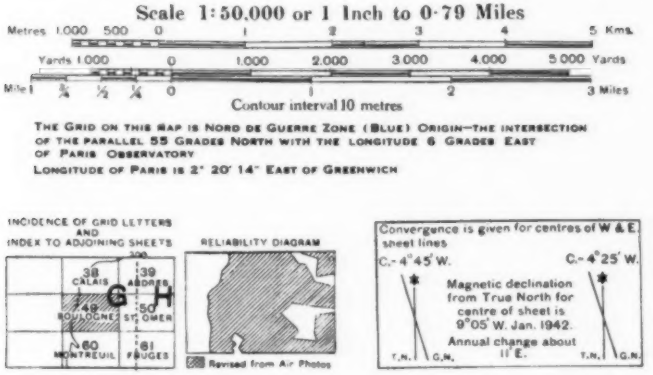

Scale 1:50,000 or 1 Inch to 0·79 Miles
Metres 1,000 500 0 1 2 3 4 5 Kms.
Yards 1,000 0 1,000 2,000 3,000 4,000 5,000 Yards
Mile 1 ¾ ½ ¼ 0 1 2 3 Miles
Contour interval 10 metres
THE GRID ON THIS MAP IS NORD DE GUERRE ZONE (BLUE) ORIGIN—THE INTERSECTION OF THE PARALLEL 55 GRADES NORTH WITH THE LONGITUDE 6 GRADES EAST OF PARIS OBSERVATORY
LONGITUDE OF PARIS IS 2° 20' 14" EAST OF GREENWICH
INCIDENCE OF GRID LETTERS AND INDEX TO ADJOINING SHEETS
38 CALAIS
39 ARDRES
49 BOULOGNE
50 ST. OMER
60 MONTREUIL
61 FAUGES
G
H
RELIABILITY DIAGRAM
Revised from Air Photos
Convergence is given for centres of W & E. sheet lines
C.- 4°45' W.
C.- 4°25' W.
Magnetic declination from True North for centre of sheet is 9°05' W. Jan. 1942.
Annual change about 11' E.
T.N.
G.N.
T.N.
G.N.

FIGURE 43

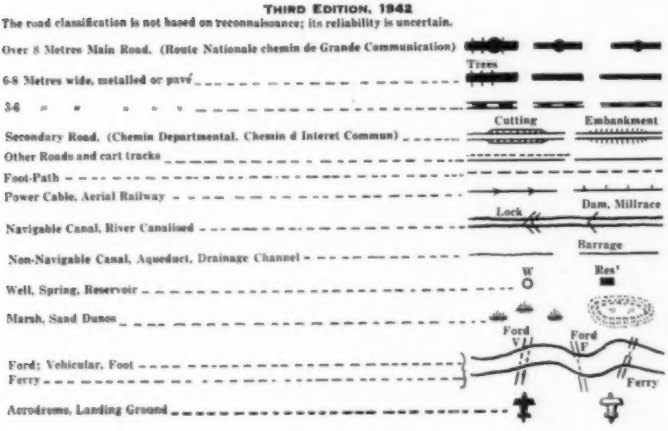


FIGURE 44.

The reliability diagram indicates those areas included in this map which have been recently checked against air photos for accuracy. This diagram plus the date of publication of the map provides the reader with a sound basis for estimating the probable accuracy of the map.

The magnetic declination chart is similar to those with which we are already familiar.

FOREIGN MAPS

In combat, many of the maps available for use will be foreign maps captured from the enemy or turned over to us by our allies. These maps will be truly foreign to the American soldier in that there will be no marginal data designed to assist interpretation by others than those for whom the map was made. A general knowledge of maps of other nations, therefore, will be of value to any soldier.

The basic drawing of foreign maps will be found to conform fairly closely to the principles followed in drawing American maps.

ELEVATION

Elevations are indicated by means of contours, hachures, or color layers. Contour intervals on foreign maps are expressed in units of measurement commonly used by the country producing the map. Without knowledge of the unit, one cannot calculate exact elevations from the contours; but, nevertheless, the contours will indicate the general slope in the same manner as they do on our own maps. Similarly, even though one is not familiar with the unit of measurement used, accurate profiles of areas can be drawn from these contoured maps.

Hachures are frequently used to indicate slopes. Figure 45 is a section from a hachured map. The hachures consist of fine lines extending from top to bottom of the slopes they indicate. They run perpendicular to the direction of contours. Steep slopes are indicated by short hachures and gentle slopes by long hachures. Elevation on a hachured

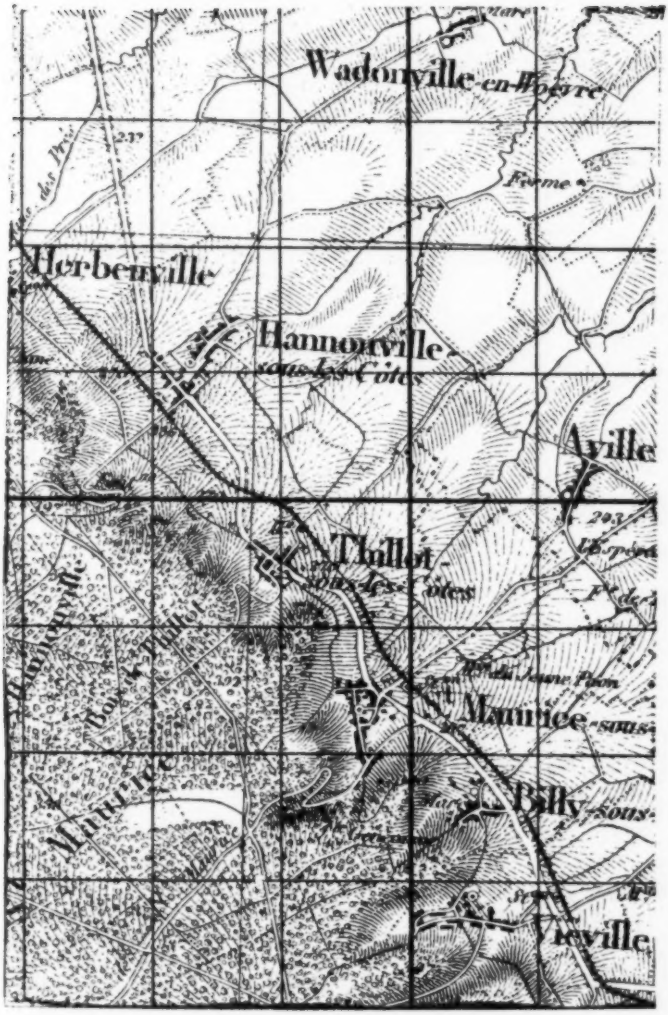

Wadonville-en-Woevre
Herbeuville
Hannonville
sous-les-Côtes
Thillot
St Maurice
Billy-sous-
Maurice
Bois de Thillot

FIGURE 45.

map is indicated only by the figures printed at critical points, such as the summits of hills, road junctions, crossroads, or triangulation points. An exact profile cannot be drawn from the information given on a hachured map. Hachures indicate only the general configuration of the ground.

Color layers are often used to indicate elevation. This system of showing ground configuration is usually applied to small-scale maps. In this system one color is used to indicate all of the area which has an elevation between stated limits—for example, all of the area shown on a given map and having an elevation between 300 and 400 feet would be printed in the same color. A key to the succession of colors and the elevation zones to which they pertain is usually shown in the margin of the map. Even though this information is in a foreign language and in units of measurement with which the map reader is unfamiliar, a general interpretation of the ground configuration will usually be possible. As with the hachured map, exact elevation of a given point cannot be determined. An exception to this rule would apply if the point were at the exact edge of one of the color areas.

GRID SYSTEMS

The underlying principles used in the grid systems of foreign maps are quite similar to those we use. Foreign grid systems are built upon the "read right; then up" idea and employ an arbitrary point of origin fitted to the needs of the particular area mapped. This point of origin is usually designated by geographical coordinates.

The "Modified British Reference System" used on most British military maps is of particular interest to us because British maps may be encountered in almost all theaters of operations. This system is based upon the division of large areas into squares 500 kilometers (approximately 312 miles) on each side. Each 500-kilometer square (250,000 square kilometers in area) is designated by a large letter.

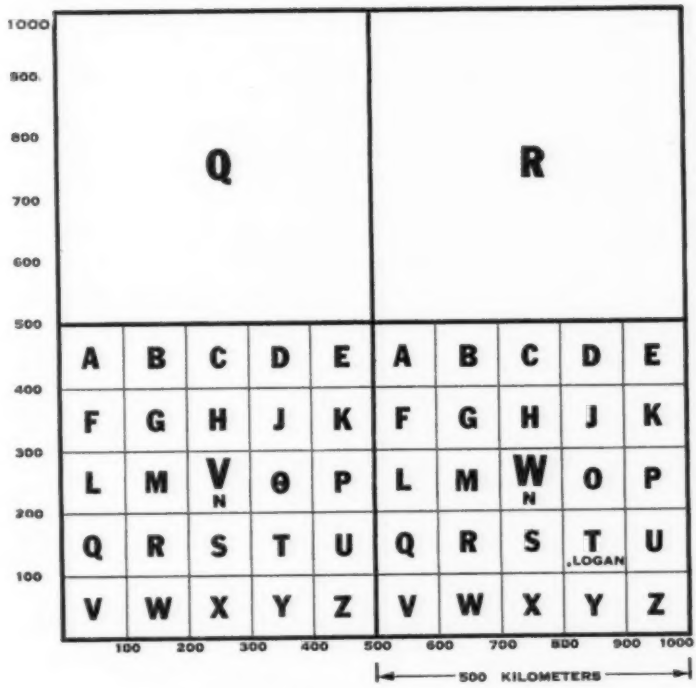

1000
900
800
700
600
500
400
300
200
100
Q
R
A B C D E A B C D E
F G H J K F G H J K
L M V N P L M W N O P
Q R S T U Q R S T LOGAN U
V W X Y Z V W X Y Z
100 200 300 400 500 600 700 800 900 1000
500 KILOMETERS

FIGURE 46.

Each of these squares is divided into 25 squares, 100 kilometers (approximately 62 miles) on each side. The 100-kilometer squares (10,000 square kilometers in area) are lettered from A to Z, omitting I to avoid confusion with the numeral "1." Figure 46 indicates these two divisions. Note that in this figure, the arbitrary point of origin for measurements is the lower, left corner of the 500-kilometer square V.

On small-scale maps, a general area can be designated as in the case of "the city of Logan," located at (w) T. This refers to the area contained within the 100-kilometer square T, which is part of the 500-kilometer square W. This reference is comparable to our own method of designating an area in terms of the grid square in which that area is located.

For use on maps of intermediate scale, these 100-kilometer squares, are further divided into 100 squares of 10 kilometers (approximately 6.2 miles) on each side. Figure 47 indicates this subdivision of square T within square W shown in figure 46. Using a map with a scale to which this division would be applied, accurate point designation is possible. Our familiar "read right; then up" system can be applied in this case. The British refer to our "right" reading as the "easting" and to our "up" reading as the "northing." Consider the location of the command post indicated in figure 47. The correct coordinates for this command post are (w)T1617. Interpreted, this designation means: larger (500-kilometer) square W, smaller (100-kilometer) square T, 1.6 grid squares (16 kilometers) east of the west edge and 1.7 grid squares (17 kilometers) north of the south edge. Different from our own method of writing coordinates, the British omit the decimal points and also the dash between the "right" reading and the "up" reading, or the "easting" and the "northing."

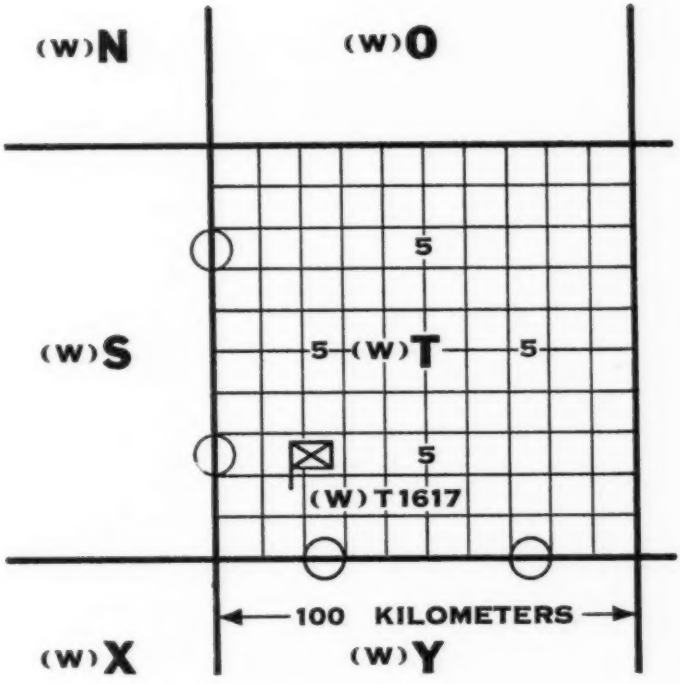


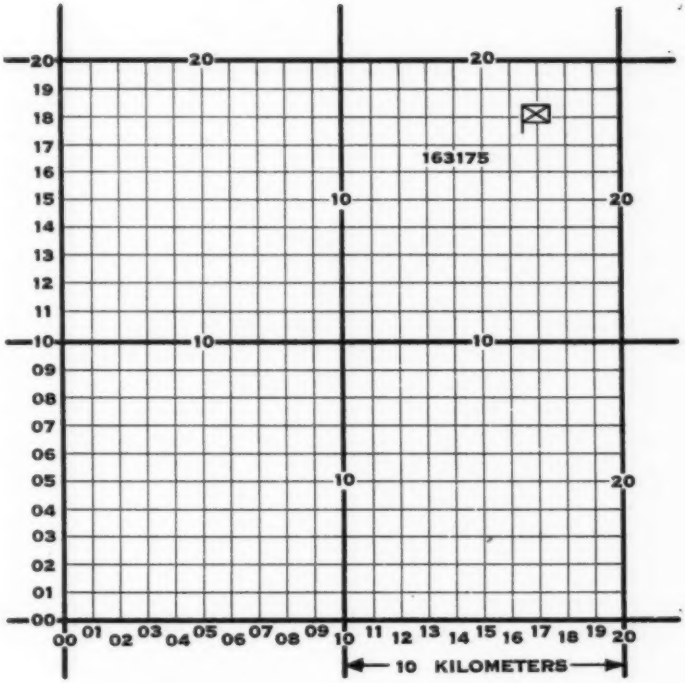
FIGURE 47.

For use on large-scale maps, these 100-kilometer squares are divided into 100 squares measuring 1 kilometer (approximately .62 miles) on each side. Figure 48 indicates this division of four of the small squares shown in figure 47.

The coordinates for the command post indicated in figure 48 usually would not include the lettered squares (500-kilometer and 100-kilometer) in which this command post location is indicated. The entire map to which this size grid would be applied would seldom cover more than one such lettered square. The lower, left (southwest) corner of the lettered (100-kilometer) square is, however, the point of origin of these coordinates. If great accuracy is desired, or if portions of more than one lettered square appear on the map, the letter designating the square can be used to precede the coordinate numbers. Using the lower left corner of square T as a point of origin, the coordinates of the command post indicated in figure 48 are 163175. Translated, this means 16.3 kilometers east of the west margin of square T and 17.5 kilometers north of the south margin of square T. Again, the decimal points and the dash which we are accustomed to see in coordinates are omitted. If the letters designating the area are included, these coordinates are written (w)T163175. With these coordinates the point can be established in relation to the maps of adjacent areas.

CONVENTIONAL SIGNS

Conventional signs of the various countries of the world are of wide variety. A study of the samples given in figures 49, 50, 51, 52, and 53 will indicate one general principle that seems to be applicable; i. e., in general, the conventional signs used by foreign armies adhere to our principle that the signs "resemble the objects which they represent." Exact interpretation of foreign conventional signs, however, requires study and memorization. Numerous reference texts and pamphlets are available to assist in the study of conventional signs and symbols of most of the Allied and Axis countries.


20
20
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18
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163175
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07
06
05
10
20
04
03
02
01
00
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20
10 KILOMETERS

FIGURE 48.

Figure 49 is a section of a Japanese map. The similarity of this map to our own maps is apparent. It is obvious that it can be read in a general way even by one unfamiliar with Japanese signs and symbols. A familiarity with our own maps, supplemented by a general knowledge of conventional signs and an understanding of the scale used, would make this map quite intelligible to anyone knowing what general area is represented.

The graphic scale of this map indicates measurements in meters along the upper portion, and in "ri" and "cho" along the lower portion. A ri, in the Japanese system of measures, is equal to 36 cho. In terms of the metric system, a ri is equal to 3.92727 kilometers. Converting to the American system of measures, one ri is equal to slightly more than 2.4 miles. Thus, the scale of this map can be translated to more familiar terms. Such translation will show that the representative fraction of this map is approximately 1:50,000.

Figures 50 and 51 are reproductions of Japanese hydrographic charts. Although these are of naval origin, such charts would be of value to the commander of a unit defending the adjacent shoreline or to the commander of a landing force attacking that shoreline.

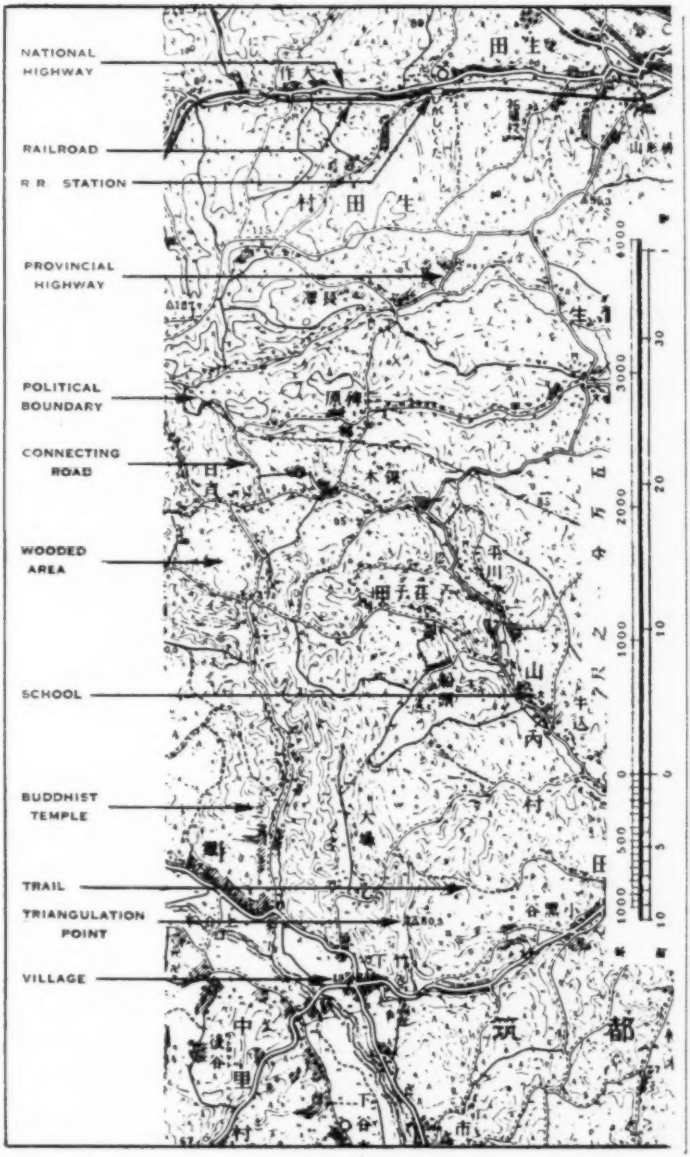
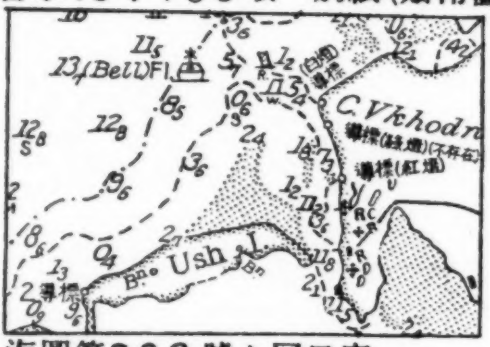

NATIONAL HIGHWAY
RAILROAD
R.R. STATION
PROVINCIAL HIGHWAY
POLITICAL BOUNDARY
CONNECTING ROAD
WOODED AREA
SCHOOL
BUDDHIST TEMPLE
TRAIL
TRIANGULATION POINT
VILLAGE

FIGURE 49.

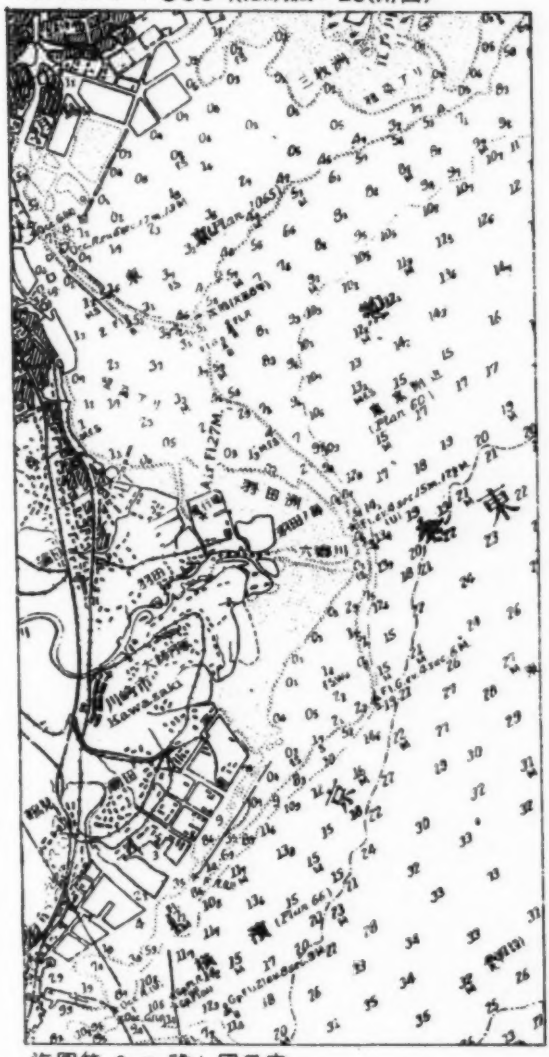
水路告示15年150項　別紙(貼附圖)ノ3



海圖第262號ト同尺度

FIGURE 50.

水路告示16年835項(2)別紙ノ26(附圖)



海圖第87號ト同尺度

塗色ノ部ハ改補スベキモノ

FIGURE 51.

Figure 52 is a section of a French map. Here, too, the similarity of French and American conventional signs is apparent. Even if the particular signs were not labeled on this map, the significance of some of them could be readily deduced. The signs for roads are obviously either roads or railroads. They are too numerous to be railroads; therefore, they must be roads. Similar deduction could be applied to the church and cemetery signs. The proximity of one to the other and their similarity to our signs for these works would indicate that they represent a church and a cemetery. From a military point of view, the question of which is which, is of comparatively small importance unless one is on the ground, where this can be readily determined.

Note the logic in the development of the French signs for paths, lanes, secondary roads, and main roads. As with our own signs for these routes, the French signs seem to conform to a logical progression from the least important to the most important.

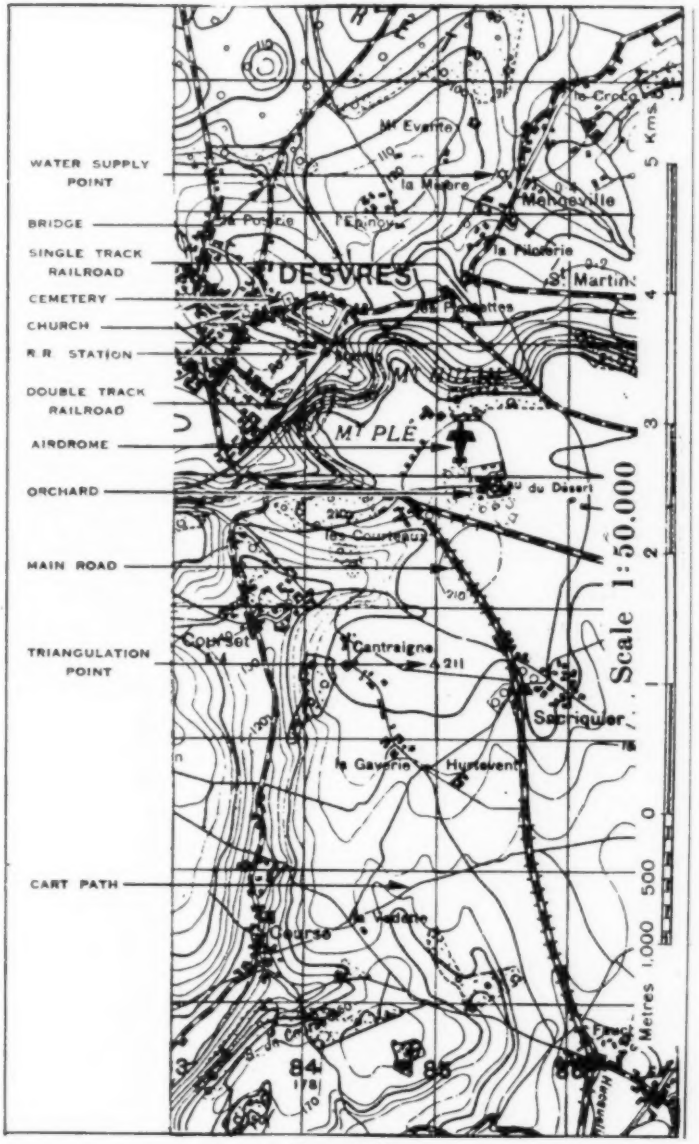

WATER SUPPLY POINT
BRIDGE
SINGLE TRACK RAILROAD
CEMETERY
CHURCH
R.R. STATION
DOUBLE TRACK RAILROAD
AIRDROME
ORCHARD
MAIN ROAD
TRIANGULATION POINT
CART PATH
DESVRES
Mt Evarre
la Mesre
Mongeville
la Pilorerie
St Martin
Mt PLÉ
Centraigne
Sacriquier
la Gaverie
Hurlevent
Courset
Scale 1:50,000
5 Kms
Metres 1,000 500 0

FIGURE 52.

In the case of the section of a German map shown in figure 53, the same principles hold true. Interpretation of the graphic scale is facilitated by the fact that the Germans use the metric system for measuring distances. By converting meters to yards, the more familiar unit can be used. This map, like the Japanese and French maps shown, is quite understandable, in a general way, to anyone familiar with American maps.

CONCLUSION

In general, mapping methods throughout the world are fundamentally the same. Hence, thorough knowledge of the methods of reading American maps provides an adequate background for the reading of foreign maps. Even without training in the use of foreign maps, anyone familiar with American maps can make a general interpretation of most foreign maps.

Exact interpretation of the maps of any particular nation requires study of the mapping methods of that nation, familiarity with its conventional signs, its units of measurement, and its language.

NOTE: Since the above article was prepared, a Tentative Technical Manual, "Use of Foreign Maps" has been published, under date of November 5, 1942, by the War Department.

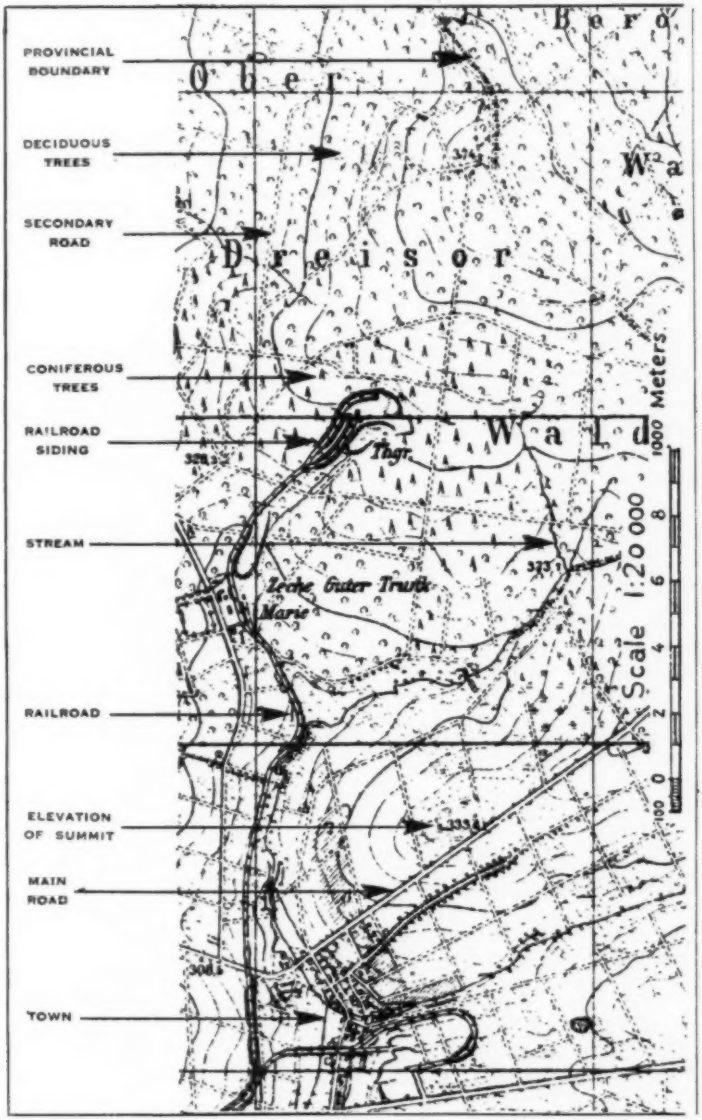

PROVINCIAL BOUNDARY
DECIDUOUS TREES
SECONDARY ROAD
CONIFEROUS TREES
RAILROAD SIDING
STREAM
RAILROAD
ELEVATION OF SUMMIT
MAIN ROAD
TOWN
Ober
Dresdor
Wald
Thgr.
Teche Guter Trunk
Marie
Scale 1:20 000
1000 Meters

FIGURE 53.

CHAPTER 8

The Thrust Line System of Point Designation

There is an increasing use of the "thrust line" system of expressing the location of a point on a map or on the ground. This system is independent of grids, and is particularly adapted to use in certain circumstances which will be discussed later in this article. An understanding by the reader of how the thrust line system operates is a necessary preliminary to an intelligent discussion of its use. (See figure 54).

Two points (O and E on the figure) are selected to establish the thrust line. These two points are usually, although not necessarily, along the general direction of advance, and must be of such a nature that they can be located easily on the map. The rear point (O) of these two points is designated as the point of origin. The forward point (E) is called the extension point. The thrust line may be extended indefinitely in both directions along the axis OE.

To establish the location of any given point (X) on the map, a line is drawn through that point and perpendicular to the thrust line (OE). The basic points of reference in designating the location of the point (X) are—first, the point of intersection (Y) of this perpendicular and the thrust line; and second, the point of origin (O). The point to be located (X) can be designated as the measured distance from O to Y and the measured distance from Y to X. These measurements may be made from the graphic scale of the map or, as will be explained later, they may be expressed in inches and tenths of inches, or centimeters and millimeters. The graphic scale of the map shown in Figure 54 happens to be graduated in miles; hence in using this

map and its graphic scale, we express the measurements in miles and tenths of miles. Scales of foreign maps may be graduated in kilometers, meters, ri, and so on, depending on the country of origin.

If it is known by the person calculating this information that the person interpreting it will use a map of the same scale as the one he is using, these distances may be expressed in inches and tenths of inches or centimeters and millimeters as measured on the map. If the graphic scale is used in measuring these distances, the scale of the maps involved does not have to be the same. This unit of measurement can be established by the commanding officer when he designates the thrust line, or it may be established as standing operating procedure within the unit.

In writing these distances as coordinates, the measurements are preceded by the letter F or the letter B, to indicate forward or backward from the point of origin, and the letters L and R to indicate the left and right of the thrust line. Thus, point X in figure 54 is located at F029R007 with reference to the thrust line OE. This designation means, "forward two and nine tenths miles from the point of origin (O), and right seven tenths of a mile from the thrust line (OE)." Note that the last digit in each of the numbers of this designation represents tenths of a mile, although the decimal point to indicate this is habitually omitted.

Similarly, point W in figure 54 is located at B002L004, or "back two tenths of a mile from O, and left four tenths of a mile from the line OE." Here, as in the case of designating a point which is forward from the point of origin, left and right are in terms of a person facing toward the extension point.

If it were known that the person interpreting these coordinates would use a map of the same scale as that used in figure 54, and if inches measured on the map were the prescribed unit of measurement, the coordinates of points X and W would be expressed as F045R012 and B002L006, respectively.

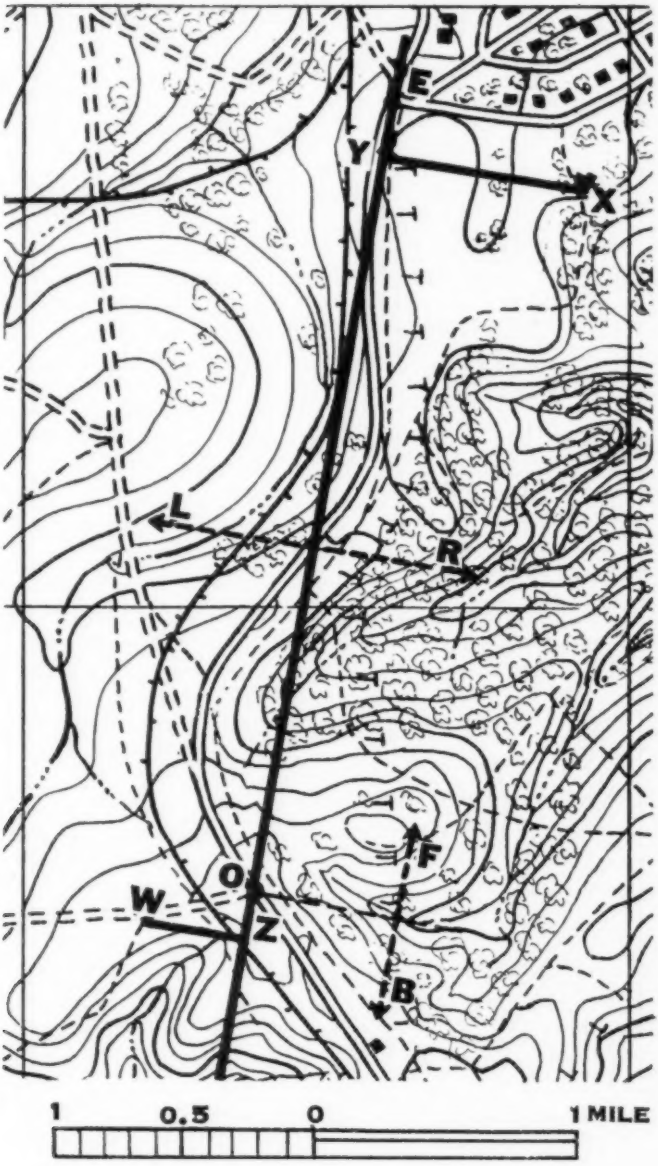


FIGURE 54.

This method of designating the location of a point is entirely independent of grid lines. Because of this, it is readily adapted to use on aerial photographs and ungridded maps.

Coordinates relative to a given thrust line have no significance unless the thrust line and the point of origin are known. By reference to previously agreed thrust lines, coordinates can be sent in the clear by radio, and locations can be freely designated in messages which might fall into enemy hands, since the coordinates are already in code to anyone who does not know the thrust line and point of origin referred to.

The thrust line system, therefore, is valuable to the officer who is sending out a reconnaissance patrol. The patrol is given a thrust line generally following its route of movement. The patrol can report, by means of thrust line coordinates, the location of anything it observes. The location of the patrol itself can be similarly reported.

The commander of a large unit might find it convenient to designate separate thrust lines for use by different elements of his command. In this case, thrust lines should be numbered or designated by colors in order to avoid confusion, and the color or number of the thrust line used should be stated when giving coordinates.

Patrols operating away from their units for extended periods can arrange previously for the use of different thrust lines at different times. Their positions can thus be reported regularly. This periodic changing of thrust lines will prevent the enemy from establishing the thrust line being used and interpreting the coordinates given. If required by the nature of the operation, changes in thrust line can be scheduled in much the same manner as changes in radio channels.

CHAPTER 9

The Rating of Officer Candidates

The following material is presented with a view to informing prospective Officer Candidates, and the officers who select them, of the methods used by The Infantry School in evaluating the abilities of the candidates and determining those who will be commissioned as officers.

Each Officer Candidate class is organized into a company for administrative purposes. These companies are organized into battalions, which are assigned to training regiments. The tactical officers of these organizations act as judges and as advisers to the candidates.

Based to a large extent upon the recommendations of the tactical officers, the Faculty Board of Officers, appointed by the Commandant makes the final recommendation as to whether or not a particular candidate will be commissioned.

In this chain of command, the platoon leader is the tactical officer who is in the best position to make a thorough evaluation of the abilities of each man. He is required to attend classes with the candidates in order to hear and see the manner in which each candidate recites or performs during a class exercise. It is the job of the platoon leader to know thoroughly each man in his platoon, to encourage those who are progressing satisfactorily, and assist those who are having difficulty.

Because he is the key man in this organization, the following instructions issued to tactical officers by the Office of the Commandant of The Infantry School, on how to analyze and evaluate each officer candidate are directed principally at the platoon leader. They should be particularly interesting and valuable to officers on duty with, and members of, ROTC units.

THE INFANTRY SCHOOL
Office of the Commandant

Fort Benning, Georgia,
November 9, 1942.

GUIDE FOR TACTICAL OFFICERS OF THE TRAINING BRIGADE

1. GENERAL.—*a.* With the tremendous expansion of our armed forces the need for officers, particularly of company grade, is acute. No form of civilian endeavor presents a reservoir of immediately available material. Competent infantry officers may come from all walks of life, but competency in this new profession can be ensured only by efficient training of a man already possessed of certain fundamental qualities. In the short time available we cannot hope to produce a finished product, but this is the end to which we must strive. The solution of this problem—the Officer Candidate Training System—depends for its success upon the ability of its administration, that is, the ability of the tactical officers, to *know, judge,* and *teach* men.

b. Assuming agreement upon the desired type of candidate, it seems obvious that our most difficult task is to determine, in the brief time allowed for observation, whether each candidate does or does not measure up to the standard so fixed. Every man is inclined to judge others by the values he places upon himself. This makes it vital that those officers called upon to pass judgment be themselves of the highest caliber, as well as mature in judgment. Too much stress cannot be placed upon this point. While the loss of a potential officer is serious, the selection of an incompetent may ultimately result in loss of life and the failure of otherwise sound tactical plans. Since the platoon leader is the basic judge at the school, it is imperative that he be selected with care and be constantly supervised and trained.

FIGURE 55.

On the day of his arrival at Fort Benning, the Officer Candidate removes his chevrons and regimental and division insignia, putting on instead, the distinctive cloth insignia of the Officer Candidate. This insignia is worn on the left pocket of the khaki shirt and on the right sleeve of the blouse and overcoat, with the lowest point four inches from the cuff.

2. THE PLATOON LEADER. The duties of a platoon leader are twofold. On the one hand he is a judge; on the other he has the equally important functions of an instructor. *If he knows a man's deficiencies and does not earnestly try to correct them, he has only half-performed his duties.* He can ask no finer reward than the realization that his instruction has resulted in transforming a potential incompetent into an efficient infantry officer.

3. THE QUALITIES OF LEADERSHIP. Analysis indicates that the qualities listed below are essential to a competent infantry officer:

a. Abstract Mental Qualities.

(1) *Perceptive Alertness.* The ability to quickly see and grasp each new problem as it arises, and recognize its importance; in other words, "to think on his feet."

(2) *Initiative.* The ability, once a problem is recognized, to willingly formulate a decision, and execute that decision upon his own responsibility.

(3) *Resourcefulness.* The ability to make the fullest use of all facilities at hand, and, by improvisation, to extend or add to those facilities.

(4) *Mature Judgment.* Judgment is the "mental yardstick" by which an officer determines the true value of his decisions. It may be called mature when it equals or surpasses that of the man of average education and ordinary worldly experience.

(5) *Justice.* The power conferred upon an officer by the military system to affect the careers and even the lives of others makes it indispensable that this power be justly exercised.

(6) *Self-confidence and Courage.* A sincere conviction of the correctness of his own considered decisions is essential to the energetic execution of those decisions. These qualities must be

cultivated but they must not be exaggerated to the point where they become conceit and stubbornness.

(7) *Respect and Cooperation.* The quality of recognizing and respecting the opinions, and rights of others, both superiors and subordinates. Only upon this foundation can true cooperation be achieved.

(8) *Ambition and Industry.* Every officer must have a keen desire to better himself *and his command,* but beyond that he must also have the determination and energy to accomplish such desire.

(9) *Emotional Stability and Sense of Humor.* The officer who "blows up" under pressure may prove fatal to his command. A sense of humor is our mental "balance wheel" and is not only a desirable, but an essential quality in any officer.

b. Physical Fitness. An officer must have the physical ability to be present where needed, especially in combat, in condition to perform his duties. Disfigurations, marks of disease, etc., may give an officer an unpleasant appearance, but if his general character is strong enough, they can be overcome.

c. Educational Qualities.

(1) *Mental Discipline.* The ability to analyze each problem and reach a logical conclusion, and to retain the fruits of study and instruction.

(2) *Literacy.* An officer must be able to read, write, speak, and understand the English language. Of vital importance is his ability to express himself understandably orally and in writing. Do not accept Army General Classification Test (A.G.C.T.) score as final evidence of this, but satisfy *yourself* in each case.

(3) *Professional Knowledge.* An officer must have a good working knowledge of the weapons at his disposal, the tactics he may be expected to employ, and of army administration. These things may be learned, and evidence of the capability and desire to learn quickly may prove adequate in a candidate.

d. Command Qualities.

(1) *Military Bearing.* Military bearing is the appearance of an officer in the eyes of others and is made up of the following attributes:

(a) Poise
(b) General appearance.
(c) Cleanliness and neatness of person and apparel.
(d) Conformation of the body.

(2) *Force.* This quality is founded principally upon self-confidence, but it includes the ability to sway the minds of others both by the substance of what is said and by the manner of saying it.

(3) *Voice.* Should be clear, modulated, and coupled with the use of distinct enunciation in speech. Weaknesses of voice can be cured or reduced.

4. IMPORTANCE. Every one of the items discussed above is essential, to a certain extent. A candidate's deficiency in one may be offset by proficiency in another of the same general group, but even an exceptional proficiency in one group will never justify commissioning a candidate who is below the passing mean in any one of the other three groups. There are many other qualities which are desirable in an officer, but they are not covered here because they are not deemed *essential.*

5. METHODS OF STUDYING MEN. The platoon leader may best intimately know his men by judicious use of the following means:

a. Initial Impression. As soon as possible after first personal contact with the candidate the platoon leader should make written notes of the impressions received.

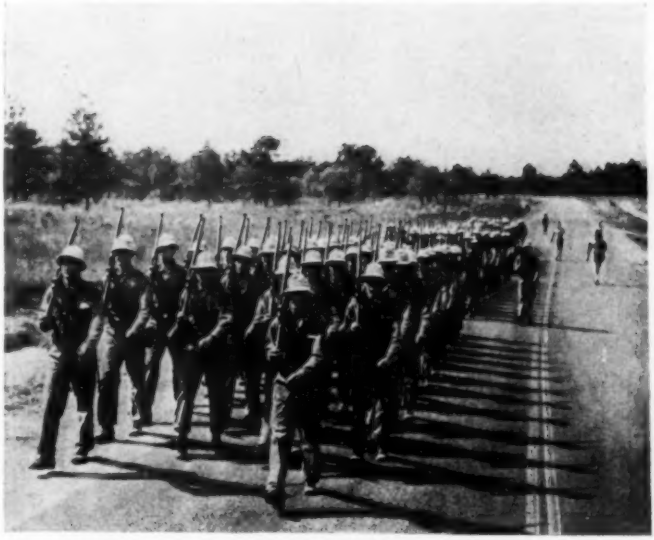


FIGURE 56.

Starting with the first day of training, Officer Candidates take turns serving as company commander, and as platoon and squad leaders in order to develop leadership and ability to command. These assignments are rotated each week so that by the end of the course, each candidate has had an opportunity to demonstrate his leadership ability in at least one of the key positions.

b. Interview. As soon as practicable after the candidate's arrival the platoon leader should personally interview him. At this time the platoon leader should have before him the man's Information Card, and using this for reference, draw the man out concerning all facts of his life which may have a bearing on his work at the school, and which may affect his leadership qualities. Try to get behind the scenes. The actual method for interview depends upon the personalities concerned, but the principal point to keep in mind is that the candidate must be put at his ease and kept that way throughout. See Appendix A.

c. Past Record and Background. If we believe our study of a man for three months will entitle us to hazard a reasonably accurate opinion as to his qualifications, we should certainly place importance on his doings for the past twenty to thirty years. What is his racial background? What did his parents do for a livelihood? In the light of what social standards was he reared? What advantage has he taken of his opportunities and what handicaps has he overcome? All of his past life will be likely to mirror his future, and knowledge of it is vital to a fair judgment of him.

d. Autobiographies. During the first week of the course have each candidate write an autobiography of not less than 500 words. These constitute a valuable check on the facts obtained by interview regarding literacy and background.

e. Frequent personal contact. Eat with the men, mix with them in the field, talk with them freely, and encourage them to ask your assistance in personal as well as military matters.

f. Constant Observation. Watch the men at work, at rest, and at play. Never let a day pass without reducing your impressions thus formed to written notes. Try to avoid coloring one day's picture with impressions formed on previous days.

g. Opinions of Others. Platoon leaders and company commanders should be on the alert to cooperate with each other in rating the students of the company. Whenever a platoon leader rates a man from a platoon other than his own, he

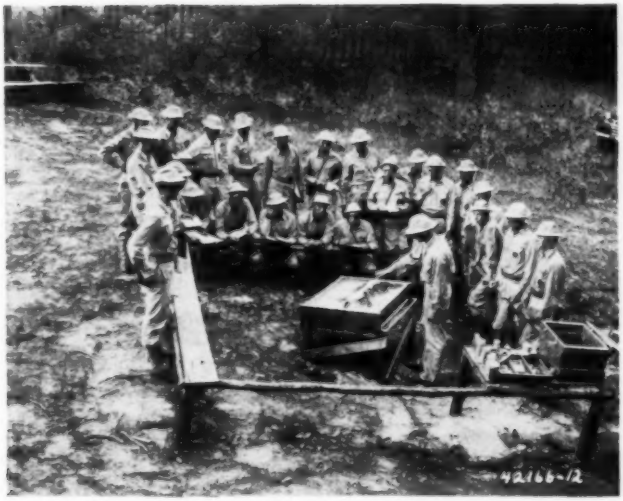


FIGURE 57.

Much of the training in the Infantry School is conducted by means of conferences during which students are free to ask questions of the instructor and are frequently called upon to present their solutions to the problems discussed. In the conference shown above, the instructor is using a sandtable to explain and clarify certain tactical principles.

should give to the man's platoon leader a brief but comprehensive efficiency report covering his observations. Similar reports should be obtained from instructors where practicable.

h. Warning. There is a natural tendency on the part of the average platoon leader to formulate, in the early stages of each class, certain positive conclusions as to men he has noted, and from then until Foundation Day, to unconsciously seek out every means of "proving his point." Exercise extreme care at all times to ensure, first, an unbiased record for the man, and second, an honest conclusion based upon the record; never a record based on an early conclusion.

6. FORMS AND THEIR USE. A platoon leader should have clearly in mind the forms with which he will work. These are a part of the tools of his trade and their proper use requires understanding.

a. Efficiency Reports. Use these in the light of the qualities of leadership listed above. Never give a "U" without explaining briefly on the reverse side of the report. Ratings may be made on any one or more items, and if none is felt to be applicable, write out your notes in the spaces provided. In any case be sure to note on the slip what the man was doing when he was rated. Remember that "voice and command" might be confused with "voice and leadership," two widely different things, and grade accordingly. Each report, if possible, and certainly each group of reports, should give a word picture of the man to whom you refer. These reports will be a solid basis for platoon and company ratings toward the end of the course.

b. Recorded Notes. A loose leaf system should be devised by every platoon leader to provide for a running record of each student in the platoon. This should first include a complete background, immediately followed by the platoon leader's initial impression of the man. From time to time, as new impressions are formed, or old ones altered, brief

but comprehensive notes should be made. Whenever writing such notes or reports, remember that during the course a new platoon leader might take over your platoon and he can be helped or hindered immeasurably by the clarity or obscurity of your record.

c. Duty Rosters and Delinquency Rosters. The mechanics of these records is immaterial, but it is important that they be kept accurately and up to date. They form another part of the final picture of the candidate.

d. Information Cards. These cards will be made out by the processing officer, but they must be completed and checked with each man by his platoon leader. Those pertaining to each platoon should be kept together and in the order in which the men are rated from time to time.

e. Floor Ratings. Twice during the course, at the end of the fifth week and at the end of the ninth week, each candidate is required to fill out and submit, upon a form provided, a reasoned rating of the men on his floor in barracks. As a platoon leader, these ratings will be available to you. Also your company commander may call upon you to observe certain men more closely as a result of them. The following suggestions are calculated to assist you in making the fullest and fairest use of these ratings:

(1) No matter how much the men are warned against it, such ratings are likely to be, in great part, popularity contests. Petty likes and dislikes often appear in the guise of unjust criticism. It is not uncommon for a man to be rated very low because of a single error.

(2) Living with a man increases familiarity with him, and character flaws not otherwise apparent may show up in floor rating sheets. When this does occur, several of the more competent candidates may be individually interviewed in confidence as to the basis of such rating.

(3) Try to find the reasons underlying wide differences between the floor ratings and your own, but never change your own simply to bring them closer together.

f. Preparation and Purpose of "Exhibit C." This subject is discussed in detail in Appendix B.

7. STANDARDS AND METHODS OF RATING.—*a.* At the end of the first week each platoon leader is required to choose the men he then feels to be the best five and the poorest five of his platoon. At the end of the second week he chooses the best ten and poorest ten; the third week the best fifteen and poorest fifteen; the fourth week the best twenty and poorest twenty. At the end of the fifth week the entire platoon is rated in numerical order of estimated merit from one to fifty. These ratings are all to be made strictly upon the basis of demonstrated *leadership qualities.* These ratings may be made by first dividing the men of the platoon into three numerically equal classes (upper, middle, and lower), followed by individual comparison. Checks should frequently be made; for example, compare number five with number one, and number twenty-seven with number thirty-five, and so on. A man who is rated number one the first week may be rated much lower the second, and vice versa. From week to week each man should be rated by comparison with his fellow students, and never by comparison with his prior ratings. It should always be kept in mind that candidates are not competing against each other. All may be commissioned, or all may fail. Each candidate is striving only to meet the standards for combat leadership.

b. These questions are examples of what should be considered in making ratings. During the time the candidate has been at the school has he demonstrated definite leadership qualifications? Whether the candidate is weak in giving commands is incidental, as this is only one phase of the course; the important question is, what are his leadership potentialities? This is especially true of candidates with

FIGURE 58.

Demonstrations, such as the one shown above in gun drill with the light machine gun, are part of every course in the School. The demonstrations are presented by specially trained troops, expert in their subject, who assist in giving individual instruction to each candidate.

little military service. Is the potential officer's appearance and manner such as to favor his gaining the respect and confidence of his men? Does he have a sense of responsibility; moral and physical courage? Is he just, upright and human? Does he have a sense of humor? Is he tactful and frank? Is he slovenly or boorish in appearance, manner, or speech? Is he self-controlled, genuine and sincere? Is he loyal to both seniors and subordinates? Is he quick to recognize merit in others and give credit where credit is due? Does he have a dominant sense of duty?

c. It is obviously impossible to reduce the elements of human nature and character to mathematical certainties. No exact yardstick, therefore, can be set up by which the officer candidate may be measured for the qualities of leadership. The goal of the school is to provide combat leaders. Some system must be devised in the mind of each platoon leader whereby he may fix a general passing standard. "Would you trust the candidate to lead your brother or your son into combat; and if you, as an officer, were given a mission to perform in combat, would you be willing to trust all the men of one of your platoons to him?" It is believed that such questions as these, honestly answered, will come nearer to the establishment of a true standard than any attempt at mathematical calculation ever could. Be sure to consider the potential ability of each man, coupled with his *demonstrated* capacity for improvement.

d. Experience has shown that the top men of every company will stand out early. The very poor ones will appear with equal rapidity. These are the obvious cases. But the prime problem will come with the borderliners; those whose weaknesses in training, background, single essential qualities, character, etc., are apparent only in flashes. These are the men who must be ferreted out as early as practicable, and subjected to intense scrutiny. Give them every opportunity to develop, and as the conclusion of the course nears, place their record against the list of essential qualities and consider the results with care. The army needs combat officers. As against this, the lives of fifty men may be at stake. Resolve final doubts, always, in favor of those fifty men in combat.

FIGURE 59.

Practical work periods offer the candidates a chance to translate into action what they have learned at conferences and demonstrations, and by their own study. Assistant instructors supervise closely to see that the work of the students is correct in every detail. Above, Officer Candidates are firing 37-mm antitank guns. If a student qualifies as marksman, sharpshooter, or expert, his total rating in the antitank gun course will be improved. Tactical officers carefully observe the performance of the candidates during these practical work periods.

8. INSTRUCTION.—*a.* The instructional duties of platoon leaders may be classified as direct and indirect. Direct instruction includes close order drill, physical training, voice training, etc. Since these studies come directly under the platoon leader, he has a natural tendency in rating candidates to lay great stress upon their performance in these matters. Constant care should be exercised to avoid final ratings which in reality are based upon these subjects alone. They are only a small portion of a broad course and *this is not a school to train drill sergeants.*

b. Example. The indirect phase of teaching is of vital importance. Every platoon leader must be a constant example to his men of what he *expects to find in them.*

c. Encouragement. In every class will appear candidates who because of their lack of basic training, educational background, etc., are subjected to a terrific mental hazard. A platoon leader must be capable of bringing out the best in his men. A judiciously placed word of encouragement to these men early in the course may help them immeasurably.

d. Summary. A final word to the platoon leader: Study your men and know and understand each one as thoroughly as possible. Teach and help them to the best of your ability at all times. Judge them with complete fairness to themselves and to those whom they may command in combat. If you already know and understand human nature, use that knowledge. If not, work continually to better qualify yourself to carry out the vitally important duties for which you have been especially selected. Yours is one of the biggest jobs at the Infantry School.

9. COMPANY AND HIGHER COMMANDERS—*a.* As has been noted, the key man of the Infantry School for Officer Candidates is the platoon leader. The existence of higher command is only justified insofar as it is able to assist in and coordinate the work of these key men. Disregarding administration, the chain of supervision may be considered as running from the key platoon leader, through the company and battalion commander to the Director of Officer Candidates. The following remarks apply to each link in that chain.

FIGURE 60.

At the completion of the time allotted to a specific subject, the candidates are given a graded test. Above, a portion of a class is receiving instruction prior to beginning a test which will be carefully corrected, graded, and returned. These tests provide tactical officers with an additional check on the progress of the candidates.

b. With the constant expansion and frequent changes of personnel, it is imperative that standards governing selection be maintained at a uniform level throughout the school. This is the vital function of higher command.

c. There are two basic requirements which every officer in the chain of command above the platoon leader *must* fulfill. First, he must have a complete and clear understanding of the problems and duties of a platoon leader. Every competent platoon leader may not have the present ability to exercise higher command, but no higher commander can qualify as such unless he is competent to command a platoon. Second, insofar as he is able, he must personally "know" individual candidates in sufficient numbers to enable him intelligently to check the judgment by his subordinate officers of their men.

d. From time to time it may appear that the "average" candidate is of poorer quality than his predecessors. Remember that the passing standard of leadership should be kept constant. In the event it becomes necessary to lower it, such lowering should be accomplished by no lesser authority than the Faculty Board. *When in doubt raise your standard, never lower it.*

10. SUMMARY.—The vital part that the Infantry School is playing in the training of the Infantry is apparent. The final outcome of the war depends to a great degree on what is being done at the Infantry School. The responsibilities and duties of Tactical Officers cannot be over-emphasized. Your work with officer candidates is probably the most important assignment you could be given. Each one of you has been especially selected for this duty. Every officer who is connected with the candidates, should fully realize the grave responsibilities that are involved and the importance of a proper performance of his duties to the nation's war effort.

By order of the Commandant:

THORNTON CHASE,
Colonel, A. G. D.,
Adjutant General.

APPENDIX A

SUGGESTIONS FOR INTERVIEWING

1. GENERAL.—*a. Education.* The candidate's educational qualifications can usually be checked before the interview. This should be done in order that the interview may be used primarily to sound out the candidate's leadership qualifications.

b. Experience. The period of service of most candidates has been too short to afford much information about leadership. Many of the items listed below will aid the interviewer in determining the kind and amount of leadership experience of the candidate prior to his induction. This information, with due allowance for the candidate's age and opportunities, gives the interviewer a good basis for judging how well he will respond to leadership training in the future.

c. Methods of questioning. Men's backgrounds are so varied that no single set of questions can be made to apply to all candidates, and there is no one way to put together the information obtained. Common sense and good judgment must be used. Ask questions informally. As required, ask "Why?", "When was that?", or "What happened after that?" It should not be necessary to do this often. Whenever the candidate starts to qualify his statements of his own record, allow him to do so. Once the candidate has begun to talk about a significant part of his life history, his own story yields more pertinent information than does cross-questioning.

2. SUGGESTED QUESTIONS.—*a. Background.* By asking the candidate about the following items, judge his opportunities for leadership development during early life. It is well to make notes so that at the end of the interview you can easily recall the points brought out.

(1) Candidate's home state and town.
(2) Occupations and special interests of parents.
(3) Responsibilities assumed by candidate in his early family relationships.
(4) Instances in which he took the lead in normal group activities outside the home.

b. Initiative and Leadership. By asking the following, judge the extent to which he took advantage of his opportunities for leadership up to about age 22.

(1) Main interests developed during high school years (age 14-18).

(2) Activities in groups, clubs, and organizations during high school years.

(3) Main interests during college years, or if not in college, during years when he was 18-22.

(4) If there were obstacles to his education during college years, what did he do about such obstacles?

(5) If major changes in his environment and development occurred during this period, were they for substantial reasons and for the better?

(6) Specific activities (not just membership) in groups, clubs, or organizations during these years.

(7) Offices held in organizations during these years. What did candidate do to become elected, and what did he do after election? Discount offices he occupied as a result of any system of rotation.

(8) Sports activities, especially coaching, promoting, and refereeing.

(9) Responsibilities on summer jobs held during college years.

(10) Promotions, raises, and supervisory experience, if any, obtained prior to age 22.

c. Special Cases. For college men under 23 years of age, the following items do not usually apply (with such candidates, extra time should be spent on items like those in subparagraph 2*b*, above). With older candidates, responses to these items may be used to judge leadership provided the interviewer makes proper allowance for age factors. It should be remembered that a man aged 28, for example, has had six more years to accumulate leadership experience than a man just out of college. The man aged 28 should therefore be judged by a somewhat higher standard than the man aged 22. Except under unusual circumstances, failure of a man aged 28 to show some leadership development since leaving college should be taken as a negative sign. While this section is for use chiefly with older candidates, questions 4 and 5 may be used with those younger applicants who were not in college and who were working full time before their induction.

(1) What has the candidate done each year since he was 22 years old?

(2) If he changed his line of work or his jobs during this period, were there substantial reasons for such changes?

(3) Has he tried to get further training, either in connection with his work or outside of it?

(4) What work has he done involving the training or the supervision of others?

(5) What promotions or salary increases has he obtained?

(6) In what group activities has he participated during this period?

(7) Has he gained recognition, held a responsible office, or otherwise made contributions in connection with these activities?

APPENDIX B

THE EXHIBIT "C"

1. PURPOSE AND IMPORTANCE. The purpose of each Exhibit "C" is to provide the Faculty Board with an accurate and compact word picture of a candidate as he is known by his tactical company officers. It concludes with a final analysis and recommendation, and the care with which it is prepared should be commensurate with its importance to the candidate in question. Consideration must be given to every possible factor and the fullest use should be made of all reports, notes, rosters, and other written records disclosing the quality of the candidate's work at the School. Remember that each Exhibit clearly reflects the abilities of the officer who prepared it. An example of an Exhibit "C" is appended hereto.

2. INSTRUCTIONS FOR PREPARATION.—*a. General.* Stereotyped routine is to be avoided. Descriptive phrases should be freely employed. Use a concise narrative style, keeping items within each paragraph in chronological order. Normally the spaces provided on the form will be found sufficient. Where they are not, attached sheets may be used.

b. Heading and Paragraph 1. Be sure to fill in all blanks and date the Exhibit the day of the Faculty Board meeting.

c. Paragraph 2.

(1) *Subparagraph a.* The purpose here is to convey, as fully as possible in a few short sentences, just what constituted the candidate's environment during his early formative years. Show when and where the candidate and his parents were born, the size of his family and its living standard, and whether he was reared in an urban or rural community. Show when he left the family group and his present marital and

FIGURE 61.

Graduation Day! Successful candidates receive commissions and certificates of completion of the course as well as congratulations from the staff and faculty. Above, the Assistant Commandant is shown extending personal congratulations and best wishes.

social status. Include also any unusual events in his civil life which seem to have a bearing upon his character and performance as demonstrated at the School.

(2) *Subparagraph b.* Trace, with annual dates, the candidate's entire scholastic record, including extracurricular activities. Be sure to show any gaps in the chain and, where indicated, the reason for his stopping short of graduation. Show the exact nature of any higher education, as well as any academic knowledge acquired through other than normal channels.

(3) *Subparagraph c.* Trace the history, by dates and including the nature of work, salaries, promotions, etc., of the candidate's employment for financial gain in civil life. Remember that the purpose here is to acquaint the board with any facts bearing upon his leadership qualities as disclosed by such civilian experiences. Include, where pertinent for such purpose, his travels, hobbies, and any unusual facts not elsewhere covered in the Exhibit and occurring during this period covered.

(4) *Subparagraph d.* Trace, with dates by month where possible, the candidate's military experience, showing the date he entered the service, the extent of his basic training (negative report where indicated), location and specific work in each assignment, and promotions.

d. Paragraph 3. Favorable and unfavorable comments made by the same man should be separated, provided this does not destroy the true meaning of the comment. Never quote only a portion of a comment, except where the comment has been split; then be sure to include both portions under appropriate headings. Comments should be corrected as to spelling and construction, but care must be exercised

to ensure that such corrections do not change the original meaning. Comments by the same man should be separated by commas; those by different men, by semicolons. (See paragraph *e* (1) below, for the method to be used in selecting comments for use in this portion of the Exhibit.)

e. Paragraph 4.

(1) *Floor Rating.* Immediately prior to preparation of the eighth week floor ratings, each platoon leader will deliver to his company commander a list of the ten men on each floor of the barracks occupied by his platoon whom he feels to be best qualified to rate their fellow candidates. It is well to have an eleventh man recommended to serve as an alternate. The rating sheets of the men so selected are the only ones to be used in computing the floor ratings, except that the alternate's sheet may be used where the selected men are concerned so that each man on the floor will have been rated by exactly ten of his fellows. The average of such ratings will fix the ranking position of each man rated, and after the man is so ranked on the floor the figure arrived at will be expressed on the Exhibit as, "21/26" for a man ranking 21st out of 26 men on his floor.

(2) *The Platoon Leader's Rating.* This should be given as a final numerical ranking of all of the men of the platoon and is expressed, as in the case of floor ratings, "41/52" for a man ranked 41 out of 52 men in the platoon.

(3) *Company Rating.* Immediately following the termination of the tenth week the company officers, working together, should prepare a final numerical ranking of all candidates in the company. It is suggested that all candidates be first placed in the upper, middle, or lower third of the company, and that each such group be subdivided until a final individual ranking

is agreed upon as to each man. Equal care should be exercised with respect to the ranking of each individual candidate so that upon completion the company list will show a positive picture of relative merit as to leadership qualities taken as a whole. In arriving at such ranking, each candidate's floor rating should be carefully considered as indicative, but not controlling. Constant reference should be made to the main text of this guide. The company ranking thus obtained should be expressed in the same manner as the floor and platoon leader's ratings on the Exhibit.

(4) *A. G. C. T. Score.* Insert the candidate's Army General Classification Test score or scores.

(5) *Academic Failures.* Insert only the number of graded tests failed by the candidate.

(6) *Delinquencies.* Indicate here both the number and type of delinquencies, as "5 no. 3s," or "2 no. 2s," or both.*

(7) *Weapons Qualification.* This information is no longer required, but is desirable where it is obvious that a candidate is unsatisfactory—that is, uncoordinated or gun shy. If possible it should be stated in terms of qualification or failure rather than by numerical scores.

(8) *Command Training.* In the spaces provided, show first the key number of the period as shown by the schedule of instruction, and then performance in terms of army efficiency report ratings (these may be abbreviated).

(9) *Physical Coordination.* Make a concise statement regarding physical ability, stamina, coordination, and agility, as exhibited on the obstacle course, in physical training, drill, bayonet, handling of weapons, and in field work.

*Minor delinquencies of Officer Candidates are recorded as they are incurred and are graded as a class 1, 2, or 3 delinquency, depending upon the seriousness of the offense.

FIGURE 62.

"Congratulations and So Long!" Commissioned officers now, they shake hands before departing for their new stations to begin their new duties and responsibilities.

f. Demonstrated Leadership Qualities. Obviously this is the most important section of the Exhibit. Here the platoon leader, with the aid of the other company officers, will set out his final reasoned analysis of the candidate. Before it is written, it would be well to review the suggestions to platoon leaders as set out in the main text of this guide. It should be a summarization of the candidate's record at the school stated in concise narrative style and showing what leadership qualities he possesses and those in which he is found wanting. Opinions thus expressed, particularly those unfavorable, must be supported by specific incidents. The best practice is first to state a conclusion and then demonstrate its truth by a cited incident, then another conclusion, and so on. Where applicable, of course, several conclusions may be stated together and supported by the same incident. Such incidents need not be numerous but they must be typical and not simply isolated cases. Use this to emphasize important points; not to repeat details adequately covered in other parts of the exhibit. The summarization must cover the following two points: First, the potential capacity for leadership of the candidate, and, second, his ability to learn and improve, as demonstrated by his performance AT THE INFANTRY SCHOOL.

EXHIBIT C

O. C. CLASS NO.....

*.....Plat. .....Company .....Student Training Regiment

INFANTRY SCHOOL SERVICE COMMAND

.....194.....

Fort Benning, Georgia

SUBJECT: Analysis and Recommendation of Officer Candidate

TO : Faculty Board

1. .....
(Last Name) (First Name) (M I.) (A.S.N.) (Component) (Age)

.....
(Previous Org. & Station) (Branch of Service & Grade)

2. BACKGROUND: (a) Family: (including birthplace of parents and candidate).

(b) Education: (including extracurricular activities.)

(c) Civilian experience: (positions held—period—salaries—promotions—etc.)

(d) Military experience: (organization—duty—promotions—etc.)

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*Instructions: Prepare in duplicate, original to Faculty Board, duplicate for Company File.

3. EXTRACTED COMMENTS OF CLASSMATES:

(a) Favorable:

(b) Unfavorable:

4. PERTINENT DATA:

Floor rating	Weapons Qualification:	Command Training			
Plat. Ldr. Rating	M-1 rifle	Period.....		Manner.....	
Company Rating	MG. (Hvy)	"	.....	"	.....
AGCT	MG. (Lt)	"	.....	"	.....
Acad. Failures	B. A. R.	"	.....	"	.....
Delinquencies	37-mm.	"	.....	"	.....

Physical coordination: (obstacle course, physical training, bayonet, etc.)

5. DEMONSTRATED LEADERSHIP QUALITIES AS OBSERVED BY COMPANY OFFICERS: (in own words, citing incidents.)

(a) Favorable:

(b) Unfavorable:

6. Based on observation and an analysis of the above:

(a) I do not recommend this candidate for a commission in the Army of the United States as a Combat Leader.

(b) I do (do not) recommend him for a commission as an Administrative Officer with .....
(Branch of Service)

.....
(Company Commander)

.....
(Rank)

ACTION BY FACULTY BOARD

1. It is recommended that the above named Officer Candidate *be not recommended* for a commission in the Army of the United States for the reasons indicated below:

(a) Failure in Academic work.

(b) Failure to demonstrate the required attributes for commission.

(c) .....

Secretary .....

Rank .....

CHAPTER 10

Hints For Newly Commissioned Officers

FOREWORD

The following material is adapted from a pamphlet produced by The Infantry School and distributed to all Officer Candidates upon completion of their training. This subject should be of particular interest to Professors and Assistant Professors of Military Science and Tactics and to members of R.O.T.C. units.

This document is designed to furnish newly commissioned officers with certain information regarding customs, relationships, and procedures which exist in the military service. Many of the matters covered herein are peculiar to the military service and ordinarily are learned only by experience. A lack of knowledge of certain of these may result in unintentional error on the part of a new officer and cause him to start his service at a disadvantage. All newly commissioned officers, therefore, are urged to familiarize themselves with the matters discussed herein and to study the underlying reasons for each of the statements made.

1. LOYALTY. All military organization is based upon mutual loyalty between superior and subordinate. You owe to your subordinates your best efforts in planning for their operations and ensuring their welfare. You owe to your superior your intelligent cooperation in such plans as

have been made by him for the operations or welfare of the unit. As an example of your duty to your subordinates, you should never look after your own comfort until you are assured that the comfort of all of the members of your unit has been cared for; you should not eat until your men have been fed. Similarly, you should carry out the orders or instructions given you by your superior unless it is manifest that the situation on which those orders were based has so changed that the action ordered will no longer contribute to the carrying out of the general plan. Any variance from orders is your own responsibility.

2. DISCIPLINE.—*a*. Justice is the indispensable element of discipline. Any display of favoritism by you will undermine the morale of your organization.

b. Punishment should be used sparingly. It must be prompt and suited to the offense.

c. When a soldier has been punished, the entire incident should be forgotten. He should neither be nagged nor continually reminded of his previous dereliction; however, punishments for the same offense should become progressively more severe.

d. Sarcasm and ridicule are poor instruments of discipline.

e. Reward, like punishment, should be used sparingly. Praise, when justified, should be given publicly.

3. COURTESY.—*a*. You should always address other officers by their titles in the presence of enlisted men.

b. Noncommissioned officers should invaribly be addressed by their titles. They should be required to *demand* the respect of their subordinates.

4. COMPLAINTS. Steps should be taken to ensure that any complaint from an enlisted man be brought to the attention of an officer—usually his company commander. Complaints should be thoroughly and promptly investigated; decisions must be fair.

5. RELATIONS WITH ENLISTED MEN.—*a.* Many enlisted men will imitate the officers who command them. It is therefore essential that you set the highest example. This applies not only to your performance of routine duties but to your personal appearance and habits.

b. You should be particularly meticulous about saluting. You should endeavor never to fail to return a salute from an enlisted man and should seek to return every salute with a better one than you received.

c. You should cultivate a personal knowledge of all of the enlisted men whom you command, or with whom you come in frequent contact; however, you should scrupulously avoid such intimacy as may tend to result in a loss of respect, or breed familiarity on their part. Your social activities should be separate from enlisted men. You should learn the names of enlisted men as rapidly as possible and use them frequently. You should continually study the capabilities of the men belonging to your unit. You should frequently visit your unit after duty hours. You should encourage your men to present their problems to you and give them such help as you are able to give in solving them.

d. You should never take advantage of your superior rank to obtain privileges not available to your men. For example, when the enlisted members of your unit are prohibited from smoking, you should not smoke.

6. USE OF SUBORDINATES.—*a.* You should endeavor to accomplish as many tasks as possible by issuing instructions to your subordinates. Such a practice trains the subordinates and develops their initiative.

b. The issuance of orders to subordinates for the accomplishment of a task does not accomplish the task. You retain responsibility for its proper accomplishment until it is done. You must check and supervise continually work that is being done in compliance with your orders.

c. All orders should be clear and concise. The tone in which an order is given has much to do with the manner of compliance with it. An order should be given confidently and in a tone which indicates no doubt of proper compliance by those to whom it is given.

d. Never assign tasks to your subordinates in order to conceal your own ignorance or incapacity. If you do not know how a job should be done, you should learn how it should be performed before directing some one else to do it.

7. CORRECTION OF ENLISTED MEN.—*a.* Correction of errors or deficiencies on the part of enlisted men should be made promptly.

b. Whenever possible, the underlying cause of the error or deficiency should be determined and steps taken to correct this cause.

c. Corrections should not be made harshly, particularly in the presence of others. Never subject a subordinate to ridicule.

8. RELATIONS WITH OTHER OFFICERS.—*a.* Courtesy and a spirit of cooperation are essential elements of the relationship that should exist between officers. Personal dislikes for other officers should be overcome, if possible; if this is not possible, conceal your dislikes.

b. Controversial subjects such as religion and politics should be avoided.

9. RELATIONS WITH SUPERIORS.—*a.* You should be meticulous in rendering courtesies to your superiors.

b. When an opinion is called for by a superior regarding any matter, the opinion should be honest. Don't try to guess what your superior wants you to say; don't be a "yes man." He wants *your* opinion.

c. When a decision has been made, even though it is contrary to any opinion or recommendation which you have expressed or made, you should devote every effort to carrying it out. Never indicate to a subordinate that you are not in accord with the decision of your superior.

10. MISCELLANEOUS.—*a.* Avoid debts. Budget your salary and live within it. If you must gamble, do so with officers of approximately the same income as your own.

b. If you drink, know your capacity and stay well within it. Drink like a gentleman.

c. Avoid bootlicking. Not only will it hurt you with those with whom you are trying to curry favor, but it will lose for you the respect of your associates.

d. In your conversation, avoid grumbling, bragging, and continually relating your own personal experiences. Personal stories and incidents do not interest others as they do you.

e. Avoid gossip. Its results may be serious in many ways.

f. Do not criticize your superiors to others. Avoid listening to such criticisms by others.

g. Use military channels for all military correspondence.

h. Discuss official matters only with those officially concerned. Never discuss them at home.

i. Learn what regulations and orders to read, and what to study. Volumes of these will come to your attention. You cannot read them all. You should become thoroughly familiar with some. It is up to you to learn as rapidly as possible to distinguish between those which you should scan and those which directly concern you; master the latter. In reading an order which directly concerns you, read it carefully. If it is well written, no words are wasted; hence you cannot afford to skim through it.

j. Enter into the "off duty" activities of your unit with enthusiasm.

k. Do not spend your time hunting for a few reasons or regulations that state an order cannot be carried out. It is your job to find at least *one way* of carrying out any order you receive.

l. Develop a sense of promptness; your senior officers will demand it; your men are entitled to it.

m. Profanity has no place in the vocabulary of an officer.

n. Arrange your social affairs to conform to scheduled duties. No one cares to do a holiday tour as "officer of the guard" for you.

o. Make yourself useful when in the presence of your senior officers, but take care to avoid a servile attitude.

p. Study the principles governing training and the methods of instruction contained in FM 21-5, Military Training, and cultivate the basic qualifications of a successful instructor, not the least of which is a thorough knowledge of one's subject. Lack of preparation on the part of the instructor will ruin any instruction period. Emulate the good instructors you have known; avoid the faults of the poor ones.

q. "Morale? I'll tell you what morale is. Morale is when a soldier thinks his army is the best in the world; his regiment the best in the army; his company the finest in the regiment; his squad the best in the company; and that he himself is the best damned soldier in the whole outfit."

(*Quotation from speech of Major General J. A. Ulio.*)

CHAPTER 11

Film Strips—Our Newest Visual Aid to Training

Our military program has for its objective the welding of large numbers of untrained troops into efficient combat units in the minimum of time. Every device which will help train the soldier must be used to the utmost. Because they are an integral part of well-rounded instruction and are real time-savers, visual aids have a vital place in the instruction of our fighting men. Visual aids cannot take the place of good teaching, but they should be used to supplement and enrich it.

The live, clear, forceful pictures provided by projected visual aids clarify and explain techniques and serve to illustrate new equipment. The soldier remembers what he sees, and he understands visual aids because they hurdle all barriers of language—even colloquialisms.

The three projected visual aids used extensively in the service are film strips, opaque pictures, and training films. Each of these supplements the others and each is used where it will be most effective. (See figure 63.)

Selection of the best visual aid to use in presenting instruction in a given subject, depends upon the phase of the subject to be presented. Where motion is unnecessary, still pictures may be used more effectively than training films. The instructor must decide upon the aid to be used after considering the experiences and needs of his class, the types of aids available, and the advantages and limitations of each type of visual aid.

FIGURE 63.

Film strips are especially effective when used to illustrate and highlight the material presented during a conference. The instructor, shown above, is using a film strip to supplement his conference on the heavy machine gun.

Planning and thought on the part of the instructor are necessary to utilize to the utmost the advantages of these aids to training. A few well chosen visual aids will be of infinitely more value than a large number which have been brought in merely to have a "show," or because they seem related. In many instances it will be desirable to show a training film to introduce the subject, and follow with detailed explanations and other instruction, using a film strip as the principal visual aid.

A film strip—"strip film" or "film slide," as it is sometimes called—is a series of related, still transparencies of photographs and diagrams, portrayed on individual, consecutive frames of a strip of 35-mm motion picture safety film. Each strip is titled and arranged in sequence. (See figure 64.)

The Army film strip is prepared as a teaching aid to be used by the company officer in instructing the men of his organization. It is made with the viewpoint of the individual soldier in mind. A few film strips are accompanied by printed or mimeographed notes to assist the instructor.

The "title frame" of each infantry film strip includes the title of the strip and its War Department reference text. This helps the company officer to determine quickly where the strip should be used in his instructional program. Each succeeding frame shows, in logical sequence, a series of suitably captioned illustrations. These captions are cues, or headlines, to be expanded by the instructor.

In other words, each film strip covers a particular phase, major topic, or subdivision of a subject. It is carefully planned, reviewed, and prepared with the subject material in mind and with an appropriate teaching outline, or lesson plan, as a guide. Most infantry subjects require not one but a series of film strips in order to deal adequately with essential subject matter. For example, there are fifteen film strips prepared on the subject of the Browning Machine Gun.

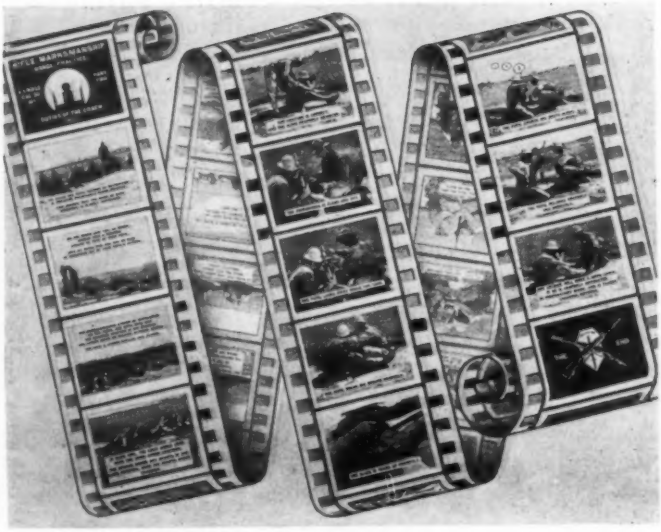


FIGURE 64.

Film strips are arranged in logical sequence for instruction and contain a varied number of frames. Each frame may be shown for as long a time as is needed and, when practicable, the same frame may be shown at different stages of the conference.

The thoroughness with which each film strip covers its subject is indicated by the following synopsis of FS 7-28, Preparatory Marksmanship Training, U. S. Rifle, Cal. .30, M-1, Part I, Sighting and Aiming Exercises:

> "This film strip is concerned with the three steps involved in the sighting and aiming exercises of preparatory marksmanship training. Pictures and diagrams show the equipment to be used, the method of instruction, and the instructional material involved in these exercises. The strip sets forth the use of the sighting bar to teach the correct sight picture, the use of the rifle rest to set up the normal sight picture with the rifle, and the use of the rifle rest to develop accuracy and uniformity in sighting."

Field Manual 21-6, List of Publications for Training, Including Training Films and Film Strips, should be examined when preparing a lesson plan for an instructional period to see what visual material is applicable to the subject and the particular lesson. Supplemental lists of training films and film strips are published from time to time in War Department circulars. In addition, the subject schedules prepared at the Infantry School, under the direction of the Commanding General, Army Ground Forces, and issued to training regiments at Infantry Replacement Training Centers, to all infantry regiments, and elsewhere, list those film strips which are applicable to the particular subjects to be taught. For example, the subject schedule for the 37-mm Gun (Training Bulletin No. MTP3-7), under "Mechanical Training", lists FS 7-8, 7-72, 7-73, and 7-76 as instructional material to be used, and allots time during the first, third, seventh, and fourth periods, respectively, for the showing of these film strips and discussion of the material contained in them.

FIGURE 65.

The instructor should preview the film strip in order to use it most effectively in his instruction. Each frame is titled so that the instructor can easily refer to it in his notes. It may be necessary to show various parts of a film strip at different stages in the instruction during a course.

The aids that are to be used should next be secured and examined or "previewed", as should all the material to be used in teaching. When previewing a film strip, keep the assigned subject or lesson in mind and use only so much of the entire film strip as will serve as a real teaching aid for that particular lesson. (See figure 65.)

The instructor must be thoroughly familiar with any film strip he is to use if he hopes to discuss fully its many illustrations, miss none of its teaching points, and be able to answer his students' questions.

The film strip can be previewed without its projector by simply holding it toward a light or against a light-colored surface. A magnifying glass helps, but is not necessary.

While film strips are made on 35-mm safety film, they cannot be shown in a motion picture projector because motion picture lamps are so powerful that they will quickly injure the film strip. The issue film strip projector is small, compact and easily portable. (See figure 66.) The projectors are issued on the basis of one per battalion or similar organization. It is recommended that the projector and a complete set of appropriate film strips be kept by the battalion S-3. If this is done, the strips will be readily available to the companies and smaller organizations for which they are made.

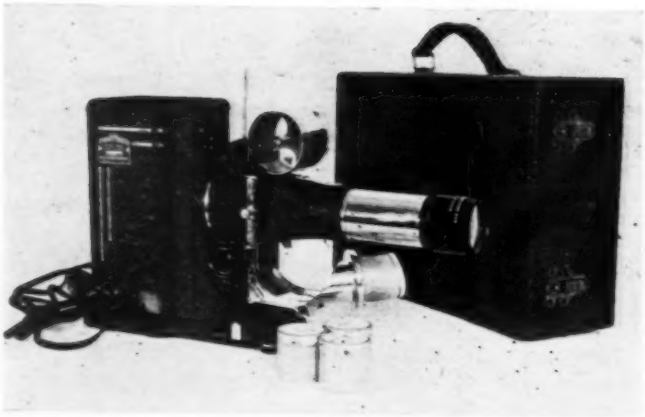


FIGURE 66.

Film strip projectors are issued on the basis of one to each infantry battalion. Easy to use, the projectors do not necessarily require an experienced operator.

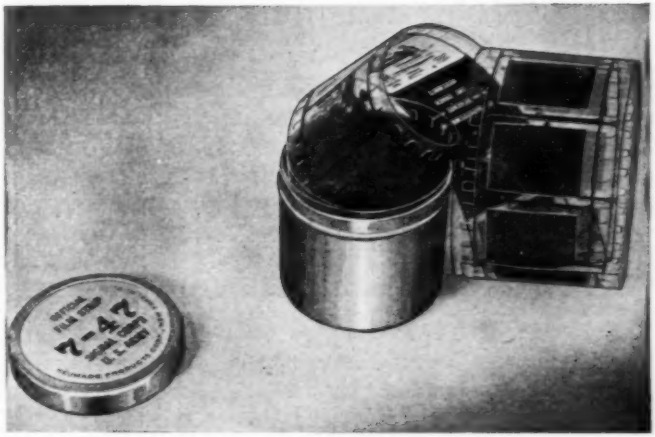


FIGURE 67.

Film strips are packed in small, metal containers which are easily carried.

Lists of film strips available to the organization should be in the hands of all of its officers. These lists should be kept up to date by the addition of any new film strips which may become available.

Each film strip is issued in a metal container. The number of the film strip, corresponding to that shown in FM 21-6, is stenciled on the cover. (See figure 67.) It is recommended that boxes be made in which to keep the film strips. The box shown in figure 68 is made of plywood and is very satisfactory. The strips should be arranged in the box in numerical order, and a list of the film strip numbers and full titles placed on the inside of the box lid for ready reference.

Initial distribution of film strips is made by the War Department to organizations through Service Command Signal Officers upon recommendation of the Commanding General, Army Ground Forces. Subsequent distribution to Army Ground Forces and Services of Supply units is made by the Service Command Signal Officer or Chief Signal Officer upon direct request of the organization or installation desiring them.

FIGURE 68.

A complete library of film strips on any subject can be kept in this plywood box. Field Manual 21-6 contains the complete list of film strips. When new film strips are released, their titles and numbers are announced in War Department circulars.

A film strip projector is easily set up. Remove it from its case, plug it into a 110-115 volt wall socket, and place it to produce the desired size projection. The size of the picture is governed by the distance of the projector from the screen. The nearer it is to the screen, the smaller is the picture. At fifty feet the issue projector will produce a clear picture about six by eight feet. The lens should be carefully adjusted to secure a sharp focus. The first frame of each film strip can be used for this purpose.

A piece of white paper, four by six feet, makes a very satisfactory screen. A light-colored wall will do nearly as well. A bed sheet or similar untreated cloth should not be used as a screen since much of the light will penetrate the cloth; this results in a dimly reflected image. As with any projected training aid, the film strip shows most brilliantly on the screen when the rest of the room is in darkness. Daylight will dim the projected image enough to render it useless. Artificial light affects the image to some extent, but some artificial light can be used in the room if it does not fall directly on the projected picture.

Infantry film strips covering 17 different subjects have become available, since publication of the most recently revised (July 1, 1942) edition of FM 21-6, List of Publications for Training. These new additions to the film strips of the 7- series listed in FM 21-6 are as follows:

FS 7-28 PREPARATORY MARKSMANSHIP TRAINING, U. S. RIFLE, CAL. .30, M1, PART ONE. FIRST STEP: SIGHTING AND AIMING EXERCISES. (FM 23-5)

FS 7-29 IDENTIFICATION OF FOREIGN MECHANIZED VEHICLES. PART TWO. IDENTIFICATION OF ITALIAN ARMORED CARS AND TANKS. (FM 30-42) RESTRICTED.

FS 7-30 IDENTIFICATION OF FOREIGN MECHANIZED VEHICLES. PART THREE. IDENTIFICATION OF JAPANESE ARMORED CARS AND TANKS. (TM 30-480) RESTRICTED.

FS 7-39 RIFLE MARKSMANSHIP, RANGE PRACTICE, U. S. RIFLE, CAL. .30, M1, PART ONE. SAFETY PRECAUTIONS. (FM 23-5)

FS 7-40 PREPARATORY MARKSMANSHIP TRAINING, U. S. RIFLE, CAL. .30, M1. PART TWO. SECOND STEP: POSITION EXERCISES. (FM 23-5)

FS 7-41 PREPARATORY MARKSMANSHIP TRAINING, U. S. RIFLE, CAL. .30, M1, PART FOUR. FOURTH STEP: RAPID FIRE. (FM 23-5)

FS 7-64 BROWNING MACHINE GUN, CAL. .30, M1917, PART EIGHT, SEC. II. TRIPOD MOUNTINGS, ACCESSORIES, FIRE CONTROL INSTRUMENTS, AMMUNITION. (FM 23-55)

FS 7-74 BROWNING AUTOMATIC RIFLE, CAL. .30, M1918A2 with BIPOD. PART ONE, MECHANICAL TRAINING: DESCRIPTION, DISASSEMBLY, AND ASSEMBLY. (FM 23-15)

FS 7-75 AIDS TO TRAINING (FMs 21-5, 21-6).

FS 7-76 37-MM GUN, ANTITANK, M3, PART THREE. MECHANICAL FUNCTIONING. (FM 23-70)

FS 7-77 U. S. CARBINE, CAL. .30, M1, PART ONE. CHARACTERISTICS AND DESCRIPTION. (FM 23-7)

FS 7-78 IDENTIFICATION OF FOREIGN MECHANIZED VEHICLES. PART ONE. IDENTIFICATION OF GERMAN ARMORED CARS AND TANKS. (TM 30-450) RESTRICTED.

FS 7-84 PREPARATORY MARKSMANSHIP TRAINING, U. S. RIFLE, CAL. .30, M1. PART THREE. THIRD STEP: TRIGGER-SQUEEZE EXERCISES. (FM 23-5)

FS 7-85 PREPARATORY MARKSMANSHIP TRAINING, U. S. RIFLE, CAL. .30, M1, PART FIVE. THE EFFECT OF WIND; SIGHT CHANGES; AND THE USE OF THE SCORE BOOK. (FM 23-5)

FS 7-86 BROWNING MACHINE GUN, CAL. .30, M1917, PART NINE. SECTION II. TRAINING FOR PLACING THE GUN IN ACTION, GUN DRILL (CONCLUDED) (FM 23-55).

FS 7-87 BROWNING MACHINE GUN, CAL. .30, M1917. PART TEN, TRAINING FOR PLACING THE GUN IN ACTION, BATTERY DRILL. (FM 23-55)

FS 7-88 ANTITANK GRENADES, PART I. DESCRIPTION, TYPES, CHARACTERISTICS, MECHANICAL TRAINING. (FM 23-30) RESTRICTED.

CHAPTER 12

Classification Procedure Within the Regiment and Subordinate Units

SECTION I

DEFINITIONS

This discussion of classification is offered to serve as an aid in bringing units to a high state of battle proficiency through effective operation of classification procedures. Letters such as those illustrated in figure 69 represent only a few of the directives calling for action by the regimental and subordinate commanders.

Classification is a major function of the army personnel system and is used to describe these four activities: Classification, Reclassification, Assignment, and Reassignment. Since these four terms recur frequently in the pages that follow, they are here defined:

Classification is the process by which all pertinent data concerning the individual enlisted man's abilities, education, intelligence, aptitudes, military experience, occupational history, interests, personal traits, and other qualifications are ascertained and clearly recorded so that through their use the individual can be assigned where he will be of most value to the service.

Reclassification is the process by which erroneous data originally entered on the Soldier's Qualification Card (W.D., A.G.O. Form No. 20) are corrected, and additional data pertinent to his military experience are recorded on this card.

Assignment is the process by which an enlisted man is placed within an organization in accordance with his qualifications and the needs of the service.

Reassignment is the change of an enlisted man to a new assignment when it has been determined that his training, skill, ability, aptitude, and other qualifications can be more advantageously used in another or different category (AR 615-28, par. 4).

SECTION II

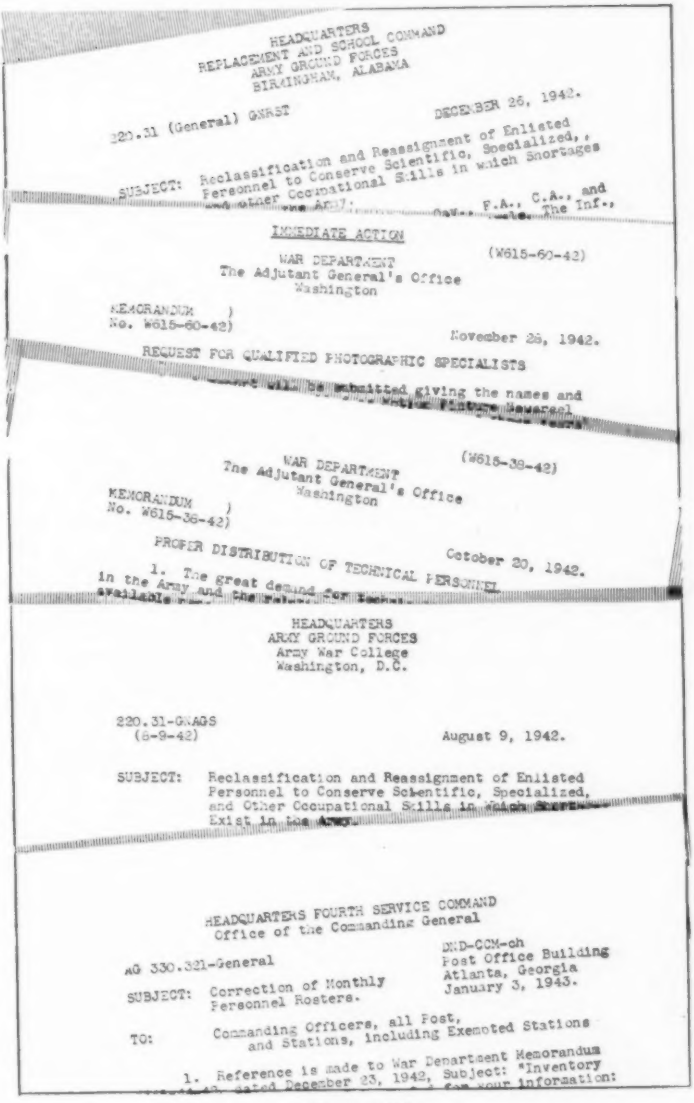
HISTORY

If a proper understanding of classification and the army personnel system is to be gained, it is necessary to go back into history. The army personnel system resulted from the development and expansion of industry, the so-called "industrial revolution," which concurrently fostered and developed varied skills. Prior to the introduction of mass production methods, industry was operated largely as a number of small partnerships with family ownership, and employees trained by a process of apprenticeship.

Before 1917, the army itself was comparable to such a small industry. Men were recruited for the army at large, rather than for any particular duty within the army. Under such a system one man was considered to be much like any other man. In view of the nontechnical nature of the army organization, it was possible to train the best apprentices over a period of years for the most important army positions.

Upon our entry into the first World War, we failed to make provision for the training or procurement of necessary specialists in our army. This situation existed despite our knowledge of the experience of foreign armies which amply demonstrated the need for technically qualified men.

By the end of 1917 it was realized by the War Department that men must be obtained who possessed special skills for a highly technical army. Railroads had to be operated; engineers, dispatchers, and telegraphers had to be found. Lumbermen had to be obtained to work in the spruce forests in



HEADQUARTERS
REPLACEMENT AND SCHOOL COMMAND
ARMY GROUND FORCES
BIRMINGHAM, ALABAMA

220.31 (General) GNRST DECEMBER 26, 1942.

SUBJECT: Reclassification and Reassignment of Enlisted Personnel to Conserve Scientific, Specialized, and other Occupational Skills in which Shortages [illegible] Army.

IMMEDIATE ACTION

WAR DEPARTMENT (W615-60-42)
The Adjutant General's Office
Washington

MEMORANDUM)
No. W615-60-42)

November 28, 1942.

REQUEST FOR QUALIFIED PHOTOGRAPHIC SPECIALISTS

[illegible] will be submitted giving the names and [illegible]

WAR DEPARTMENT (W615-38-42)
The Adjutant General's Office
Washington

MEMORANDUM)
No. W615-38-42)

October 20, 1942.

PROPER DISTRIBUTION OF TECHNICAL PERSONNEL

1. The great demand for [illegible] in the Army and the relatively [illegible] available [illegible]

HEADQUARTERS
ARMY GROUND FORCES
Army War College
Washington, D.C.

220.31-GNAGS
(8-9-42) August 9, 1942.

SUBJECT: Reclassification and Reassignment of Enlisted Personnel to Conserve Scientific, Specialized, and Other Occupational Skills in which Shortages Exist in the Army.

HEADQUARTERS FOURTH SERVICE COMMAND
Office of the Commanding General

AG 330.321-General

SUBJECT: Correction of Monthly Personnel Rosters.

4MD-COM-ch
Post Office Building
Atlanta, Georgia
January 3, 1943.

TO: Commanding Officers, all Post, and Stations, including Exempted Stations

1. Reference is made to War Department Memorandum [illegible] dated December 23, 1942, Subject: "Inventory [illegible] for your information:

FIGURE 69.

connection with the infant airplane production program. Laboratory technicians, mechanics, truck drivers, and hundreds of other specially qualified men had to be placed without delay in the modern industry which the army had become. Not only did confusion exist within the army itself, but it was discovered that the army had depleted vital industries necessary to the war effort, and men had to be furloughed back to their civilian occupations. Within the army, it was necessary to break up newly organized units to obtain especially qualified individuals who had been assigned without regard to abilities and training. On top of it all, no proper replacement system for the army had been developed, and complete divisions which had been trained as such were broken up and used as filler replacements. Stated briefly, the army was confronted with a major employment program and had no "employment service" to do the job.

In the face of such confusion the War Department took drastic action. It called to Washington a number of skilled personnel administrators from the large industries, and assembled a group of trained psychologists experienced in determining aptitudes of individuals. This group succeeded in establishing a comprehensive, efficient personnel placement system for the army. A classification card for enlisted men was prepared. Intelligence tests were reported and used in classification procedures. The technical qualifications of individuals were determined prior to assignment to organizations, and final assignments were based on technical experience.

However, it was not long after the end of the war that the army reverted to personnel procurement and placement on the apprenticeship basis. Once more, one man was considered to be like any other man. Little effort was made to determine his special qualifications or to assign him in accordance with his abilities. Part of this attitude was due to causes over which the army had no control—economy was the watchword. In industry, scientific placement was progressing rapidly and the army intelligence tests had become

the foundation for the development of other scientific placement aids. In the army, however, the assignment of the individual frequently was determined on the basis of his own preference, since vacancies had to be filled.

The re-establishment of the army personnel system for the present war was necessarily accomplished in a piecemeal manner. A basic prerequisite was a complete psychological reorientation on the subject. The thought had to be re-established that a soldier was not important primarily because he was just another man, but because he possessed a skill essential to the military organization.

Fundamentally, the problem of personnel placement in the army required the establishment of an "employment service" which could maintain contact with the individual from his first induction into the service, and continue such contact for the ten years after the termination of such service, during which time all Selective Service men are members of the Enlisted Reserve. The problem of personnel management within the army could not be divorced from the larger problem of personnel control in the country as a whole, since the depletion of skills within an essential industry would jeopardize the entire war effort. In its broader aspects, therefore, the establishment of a personnel system for the army must visualize the problem as one of personnel management, of scientific placement and control in the country's largest industry.

The primary purpose of the army personnel system, and of classification as a major part of this system, is to contribute to success in battle through the economical and efficient use of *personnel.*

Because warfare is a highly complex operation which requires a diversity of skills and aptitudes, it follows that classification within the army is an increasingly complex science. Throughout the army, classification is administered as a staff function by highly trained officer and enlisted personnel. Classification has many regulations and techniques too numerous and technical to be covered adequately in a single article.

This discussion limits itself to classification within the infantry regiment, with only such reference to higher authority and other activities as may be necessary to the understanding of the relationship of classification to the regimental and subordinate commanders. Classification of enlisted men is dealt with primarily, with only slight treatment of classification of officers and warrant officers. (See Section VIII.) For further information, reference should be made to Army Regulations.

SECTION III

THE ESTABLISHMENT OF THE UNIT PERSONNEL OFFICE

The unit personnel officer is directly in charge of classification within the regiment and is responsible, through the adjutant, to the regimental commander for classification procedures within the regiment and its subordinate units. Usually the unit personnel officer will be the assistant adjutant. Present Tables of Organization do not establish any strength or grades for the unit personnel office, but regulations (AR 345-5, par. 11*b*) state that the unit personnel officer will be provided with sufficient personnel to accomplish his assigned duties (listed in detail in AR 345-5). A workable organization for the office is charted in figure 70, showing channels of authority and interrelation with classification agencies of the division.

Likewise, no standard procedure exists to secure the necessary flow of information to the classification subsection from various other subsections in the unit personnel section. Each unit personnel officer will need to establish his own method of operation in order to take advantage of the administrative and clerical skills available to him.

One thought should guide the classification subsection and the unit personnel officer: the primary objective of classification is the placing of the individual in the job in which he does his best work and consequently from which the greatest return is made to the army.

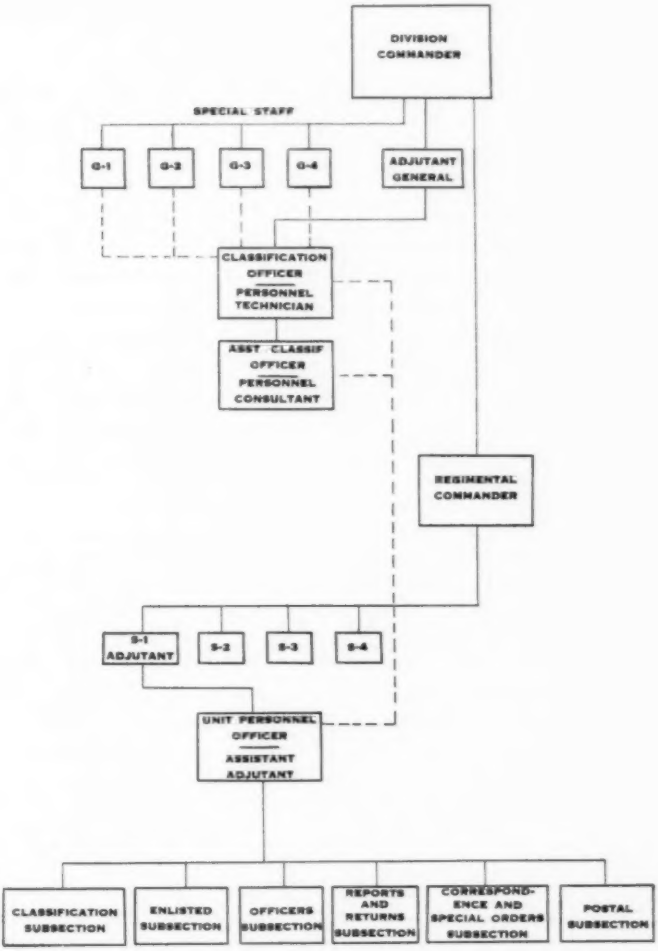

DIVISION COMMANDER
SPECIAL STAFF
G-1
G-2
G-3
G-4
ADJUTANT GENERAL
CLASSIFICATION OFFICER — PERSONNEL TECHNICIAN
ASST CLASSIF OFFICER PERSONNEL CONSULTANT
REGIMENTAL COMMANDER
S-1 ADJUTANT
S-2
S-3
S-4
UNIT PERSONNEL OFFICER — ASSISTANT ADJUTANT
CLASSIFICATION SUBSECTION
ENLISTED SUBSECTION
OFFICERS SUBSECTION
REPORTS AND RETURNS SUBSECTION
CORRESPONDENCE AND SPECIAL ORDERS SUBSECTION
POSTAL SUBSECTION

FIGURE 70.

To achieve this objective, the classification subsection of the unit personnel section should accomplish the following—

1. Classify all personnel assigned to the unit;

2. Record the results of such classification;

3. Supervise the organizational assignment of personnel received by the unit in accordance with skills possessed and organizational requirements;

4. Maintain all classification records, particularly the Soldier's Qualification Card, in a current status so that full use may be made of all echelons of skills, either existing or developed in the unit, for the purpose of assignment, promotion, special duty, transfer, or award of technician's ratings;

5. Conduct such tests as may be required from time to time in order to provide personnel for service schools or other specialized training who should mentally and physically be able to absorb the training within the prescribed period. (AR 345-5, par. 27.)

The classification group will maintain the Soldier's Qualification Card (W.D., A.G.O. Form No. 20) in a current status by entries obtained from morning reports, reports of organization commanders, notations on periodical rosters and official grades obtained at special service schools. They will check qualification cards of incoming replacements for completeness and accuracy. (AR 615-28, par. 19.)

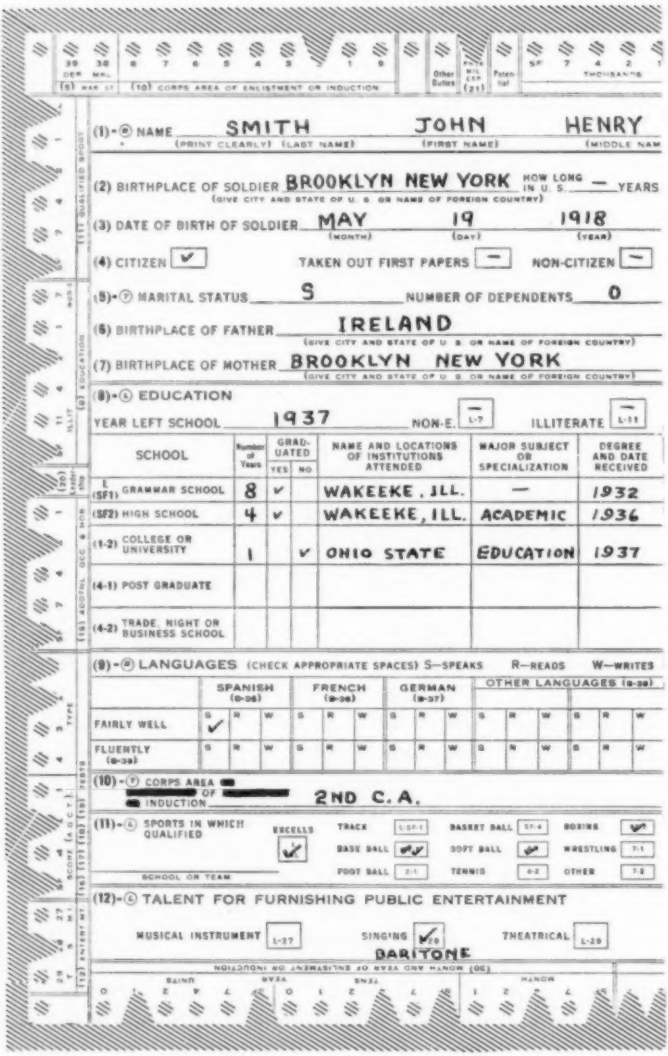
SECTION IV

CLASSIFICATION OPERATIONS DURING ACTIVATION OF A UNIT

Mention has been made of the Soldier's Qualification Card (W.D., A.G.O. Form No. 20). A typical example of this basic document of the enlisted man's classification is shown in figures 71 and 72. It is prepared, usually at reception centers, immediately after a soldier has entered the army. It will accompany that man's records wherever transferred. This basic document contains a summary of his personal history, schooling, occupational experience, test scores, military experiences, and demonstrated ability as a leader. Thereon are recorded facts about his avocational interests, languages, hobbies, and athletic skills. Instructions on the preparation of this buff-colored form (8 x 10½ inches) with the perforated edges are contained in AR 615-25.

The perforated edges provide a mechanical means for analyzing, sorting and selecting specific cards or groups of cards. The Form 20 is provided with a series of round holes around the four edges. In accordance with an established plan, the information appearing on the two faces of the card is translated to these edges by slotting away the portion of the card between the round holes and the edges to form a series of V-shaped notches.

All selecting, sorting, and slotting equipment is contained in a sorting box called the selector unit, which also acts as a carrying case for this equipment. The basic principle of selecting and sorting is the use of a long, steel needle or a combination of several, long steel needles. The simplest example of the use of these needles would be a case where it was desired to separate all men with previous military experience from those who had no previous military experience, as recorded on the card. A single needle would be inserted in the holes designated "previous military experience" on a group of cards. The cards would then be fanned out to permit the ones slotted "previous military



(1)-Ⓟ NAME SMITH (PRINT CLEARLY) (LAST NAME) JOHN (FIRST NAME) HENRY (MIDDLE NAM

(2) BIRTHPLACE OF SOLDIER BROOKLYN NEW YORK (GIVE CITY AND STATE OF U. S. OR NAME OF FOREIGN COUNTRY) HOW LONG IN U. S. — YEARS

(3) DATE OF BIRTH OF SOLDIER MAY (MONTH) 19 (DAY) 1918 (YEAR)

(4) CITIZEN ✓ TAKEN OUT FIRST PAPERS — NON-CITIZEN —

(5)-Ⓟ MARITAL STATUS S NUMBER OF DEPENDENTS 0

(6) BIRTHPLACE OF FATHER IRELAND (GIVE CITY AND STATE OF U. S. OR NAME OF FOREIGN COUNTRY)

(7) BIRTHPLACE OF MOTHER BROOKLYN NEW YORK (GIVE CITY AND STATE OF U. S. OR NAME OF FOREIGN COUNTRY)

(8)-Ⓔ EDUCATION

YEAR LEFT SCHOOL 1937 NON-E. — L-7 ILLITERATE — L-11

SCHOOL	Number of Years	GRADUATED YES	GRADUATED NO	NAME AND LOCATIONS OF INSTITUTIONS ATTENDED	MAJOR SUBJECT OR SPECIALIZATION	DEGREE AND DATE RECEIVED
(SF1) GRAMMAR SCHOOL	8	✓		WAKEEKE, ILL.	—	1932
(SF2) HIGH SCHOOL	4	✓		WAKEEKE, ILL.	ACADEMIC	1936
(1-2) COLLEGE OR UNIVERSITY	1		✓	OHIO STATE	EDUCATION	1937
(4-1) POST GRADUATE						
(4-2) TRADE, NIGHT OR BUSINESS SCHOOL						

(9)-Ⓟ LANGUAGES (CHECK APPROPRIATE SPACES) S—SPEAKS R—READS W—WRITES

	SPANISH (D-26)			FRENCH (D-26)			GERMAN (D-27)			OTHER LANGUAGES (D-28)					
	S	R	W	S	R	W	S	R	W	S	R	W	S	R	W
FAIRLY WELL	✓														
FLUENTLY (D-29)															

(10)-Ⓟ CORPS AREA OF INDUCTION 2ND C.A.

(11)-Ⓔ SPORTS IN WHICH QUALIFIED

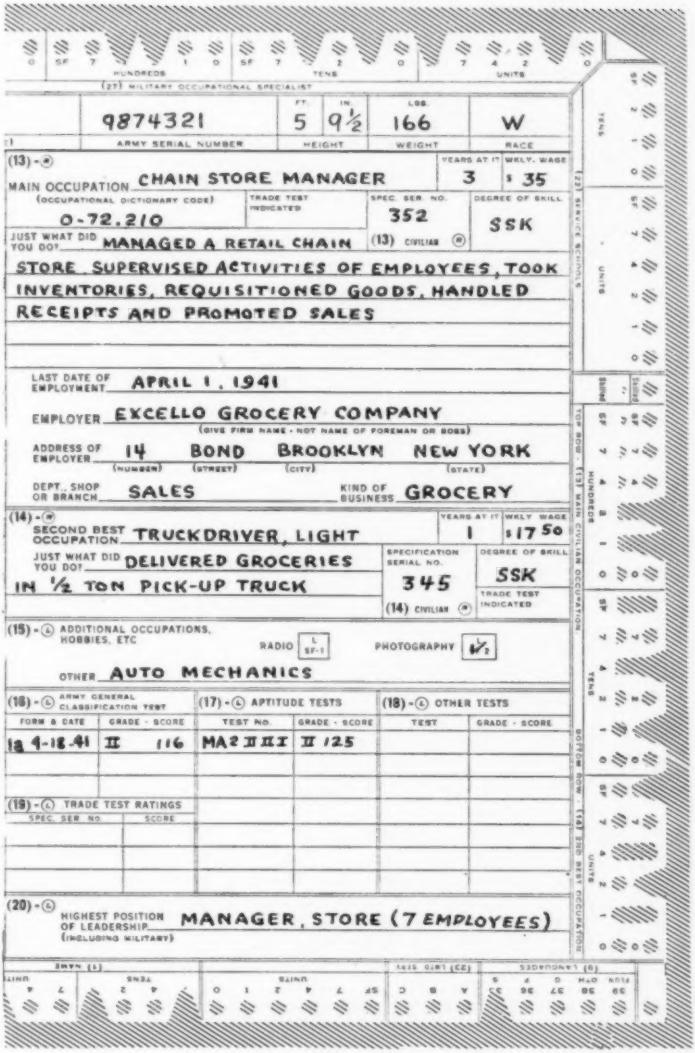
	EXCELLS				
TRACK L-27-1	✓	BASKET BALL L-27-4		BOXING	✓
BASE BALL	✓✓	SOFT BALL	✓	WRESTLING	
FOOT BALL		TENNIS		OTHER	

SCHOOL OR TEAM

(12)-Ⓔ TALENT FOR FURNISHING PUBLIC ENTERTAINMENT

MUSICAL INSTRUMENT L-27 SINGING ✓ L-28 THEATRICAL L-29

BARITONE



9874321 | 5 ft 9½ in | 166 | W
ARMY SERIAL NUMBER | HEIGHT | WEIGHT | RACE

(13) MAIN OCCUPATION: CHAIN STORE MANAGER — 3 years at it — $35 wkly. wage
(OCCUPATIONAL DICTIONARY CODE): 0-72.210 — TRADE TEST INDICATED: — SPEC. SER. NO.: 352 — DEGREE OF SKILL: SSK
JUST WHAT DID YOU DO? MANAGED A RETAIL CHAIN STORE. SUPERVISED ACTIVITIES OF EMPLOYEES, TOOK INVENTORIES, REQUISITIONED GOODS, HANDLED RECEIPTS AND PROMOTED SALES
(13) CIVILIAN

LAST DATE OF EMPLOYMENT: APRIL 1, 1941
EMPLOYER: EXCELLO GROCERY COMPANY (GIVE FIRM NAME - NOT NAME OF FOREMAN OR BOSS)
ADDRESS OF EMPLOYER: 14 (NUMBER) BOND (STREET) BROOKLYN (CITY) NEW YORK (STATE)
DEPT., SHOP OR BRANCH: SALES — KIND OF BUSINESS: GROCERY

(14) SECOND BEST OCCUPATION: TRUCKDRIVER, LIGHT — 1 year at it — $17.50 wkly. wage
JUST WHAT DID YOU DO? DELIVERED GROCERIES IN ½ TON PICK-UP TRUCK
SPECIFICATION SERIAL NO.: 345 — DEGREE OF SKILL: SSK — TRADE TEST INDICATED:
(14) CIVILIAN

(15) ADDITIONAL OCCUPATIONS, HOBBIES, ETC — RADIO — PHOTOGRAPHY
OTHER: AUTO MECHANICS

(16) ARMY GENERAL CLASSIFICATION TEST		(17) APTITUDE TESTS		(18) OTHER TESTS	
FORM & DATE	GRADE - SCORE	TEST NO.	GRADE - SCORE	TEST	GRADE - SCORE
1a 9-18-41	II 116	MA2 II III	II 125		

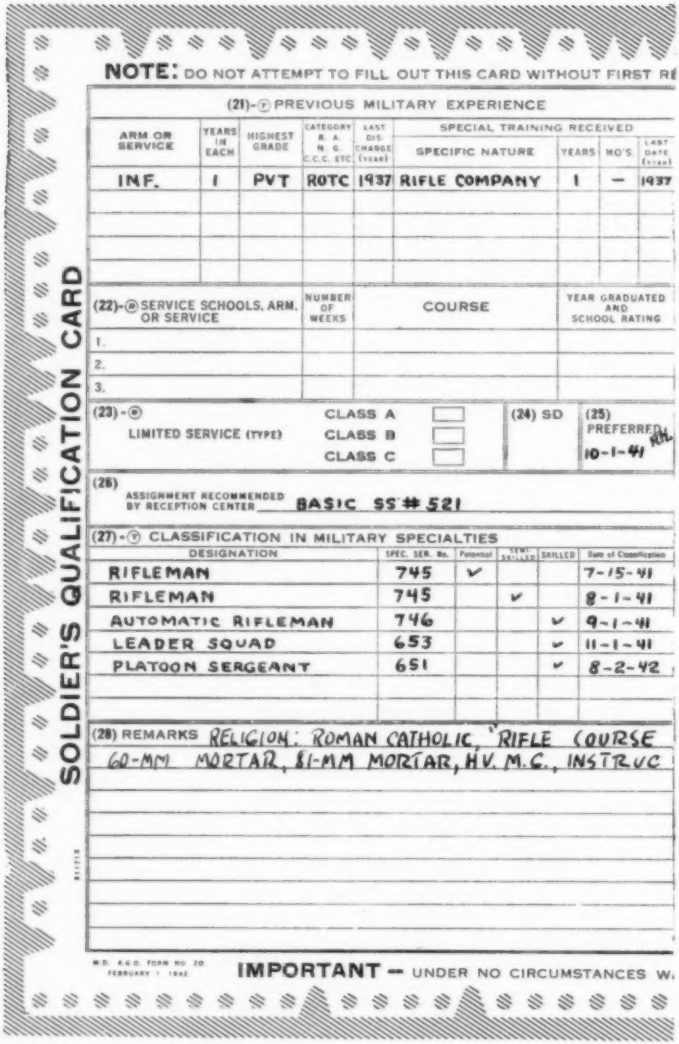
(19) TRADE TEST RATINGS

SPEC. SER. NO.	SCORE

(20) HIGHEST POSITION OF LEADERSHIP (INCLUDING MILITARY): MANAGER, STORE (7 EMPLOYEES)

FIGURE 71.

Front side of a typical form 20.



SOLDIER'S QUALIFICATION CARD

NOTE: DO NOT ATTEMPT TO FILL OUT THIS CARD WITHOUT FIRST RE

(21)-(T) PREVIOUS MILITARY EXPERIENCE

ARM OR SERVICE	YEARS IN EACH	HIGHEST GRADE	CATEGORY R. A. N. G. C.C.C. ETC.	LAST DIS. CHARGE (Year)	SPECIAL TRAINING RECEIVED			
					SPECIFIC NATURE	YEARS	MO'S	LAST DATE (Year)
INF.	1	PVT	ROTC	1937	RIFLE COMPANY	1	—	1937

(22)-(E) SERVICE SCHOOLS, ARM. OR SERVICE	NUMBER OF WEEKS	COURSE	YEAR GRADUATED AND SCHOOL RATING
1.			
2.			
3.			

(23)-(E) LIMITED SERVICE (TYPE) CLASS A ☐ CLASS B ☐ CLASS C ☐

(24) SD

(25) PREFERRED 10-1-41 RLH

(26) ASSIGNMENT RECOMMENDED BY RECEPTION CENTER BASIC SS # 521

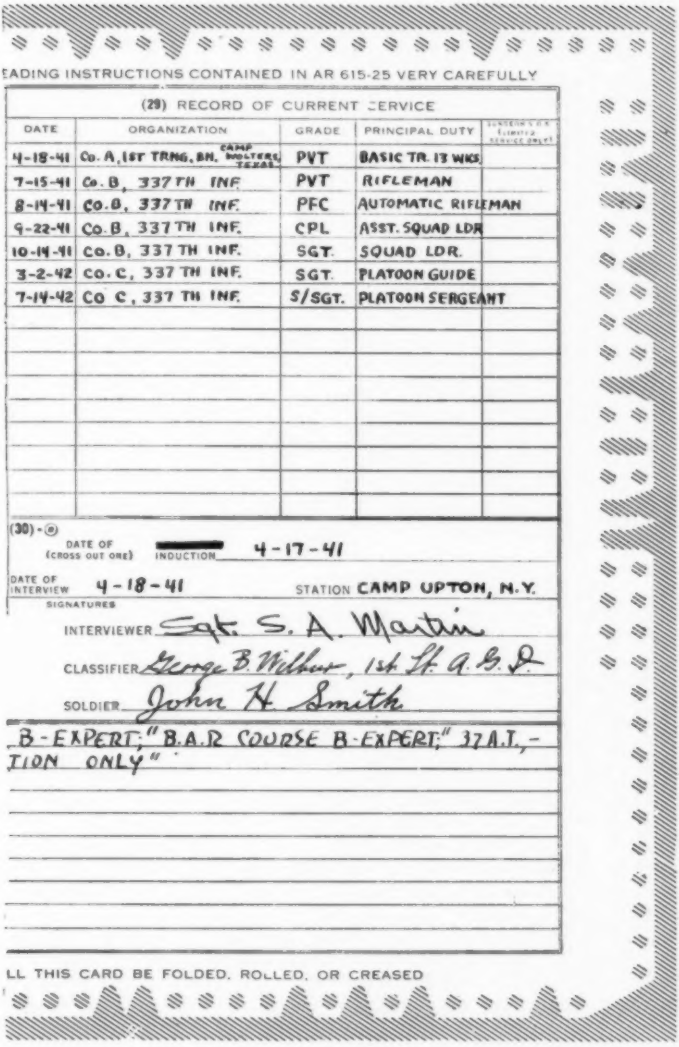
(27)-(T) CLASSIFICATION IN MILITARY SPECIALTIES

DESIGNATION	SPEC. SER. No.	Potential	SEMI-SKILLED	SKILLED	Date of Classification
RIFLEMAN	745	✓			7-15-41
RIFLEMAN	745		✓		8-1-41
AUTOMATIC RIFLEMAN	746			✓	9-1-41
LEADER SQUAD	653			✓	11-1-41
PLATOON SERGEANT	651			✓	8-2-42

(28) REMARKS RELIGION: ROMAN CATHOLIC, RIFLE COURSE 60-MM MORTAR, 81-MM MORTAR, H.V. M.G., INSTRUC

W.D. A.G.O. FORM NO. 20 FEBRUARY 1, 1942

IMPORTANT — UNDER NO CIRCUMSTANCES W



EADING INSTRUCTIONS CONTAINED IN AR 615-25 VERY CAREFULLY

(29) RECORD OF CURRENT SERVICE

DATE	ORGANIZATION	GRADE	PRINCIPAL DUTY	(UNITED STATES SERVICE ONLY)
4-18-41	Co. A, 1ST TRNG. BN. CAMP WOLTERS, TEXAS	PVT	BASIC TR. 13 WKS.	
7-15-41	Co. B, 337TH INF.	PVT	RIFLEMAN	
8-14-41	Co. B, 337TH INF.	PFC	AUTOMATIC RIFLEMAN	
9-22-41	Co. B, 337TH INF.	CPL	ASST. SQUAD LDR	
10-14-41	Co. B, 337TH INF.	SGT.	SQUAD LDR.	
3-2-42	Co. C, 337TH INF.	SGT.	PLATOON GUIDE	
7-14-42	Co C, 337TH INF.	S/SGT.	PLATOON SERGEANT	

(30) - (R)

DATE OF (CROSS OUT ONE) [redacted] INDUCTION 4-17-41

DATE OF INTERVIEW 4-18-41 STATION CAMP UPTON, N.Y.

SIGNATURES

INTERVIEWER Sgt. S. A. Martin

CLASSIFIER George B. Wilbur, 1st Lt. A.G.D.

SOLDIER John H. Smith

B-EXPERT," B.A.R COURSE B-EXPERT," 37 A.T.,-
TION ONLY"

LL THIS CARD BE FOLDED, ROLLED, OR CREASED

FIGURE 72.

Reverse side of the form 20 shown in figure 71.

experience" to drop off the needle. The ones not punched in this space would remain on the needle and the separation would be completed. Other selections may be more complicated mechanically, but the principle remains the same —the desired cards drop off the needle; those not desired remain on. (Paragraphs, 24, 25, and 26 of AR 615-26 describe selecting and sorting in detail).

The regiment, through the unit personnel officer, first comes into contact with the Forms 20 of its enlisted men during the period of activation. Use of the Forms 20 and the selector unit during this period is essential to smooth, efficient operation.

Since conditions of activation are unpredictable, no inflexible pattern can be established. Usually, however, a regiment will be activated as part of a division. Most of the following actions, taken from the activation of a recent division, concern classification. See figure 73.

Before D Day

(D Day Equals Date of Activation)

1. Officer cadre arrives D-35 and is assigned to duty by division and regimental commanders. The division classification officer and assistant division classification officer (previously designated by the Adjutant General of the division), will assist in this operation, where necessary.

2. Enlisted cadre from the parent division arrives D-30 and is assigned by division headquarters to regiments and by regimental headquarters to companies. The division classification officer, assistant division classification officer, and regimental unit personnel officers will assist in this operation. The enlisted members of the classification team should be selected from this group.

3. Remainder of the officer complement arrives D-25 to D-22. Unit personnel officers will be selected from this group if not previously designated.

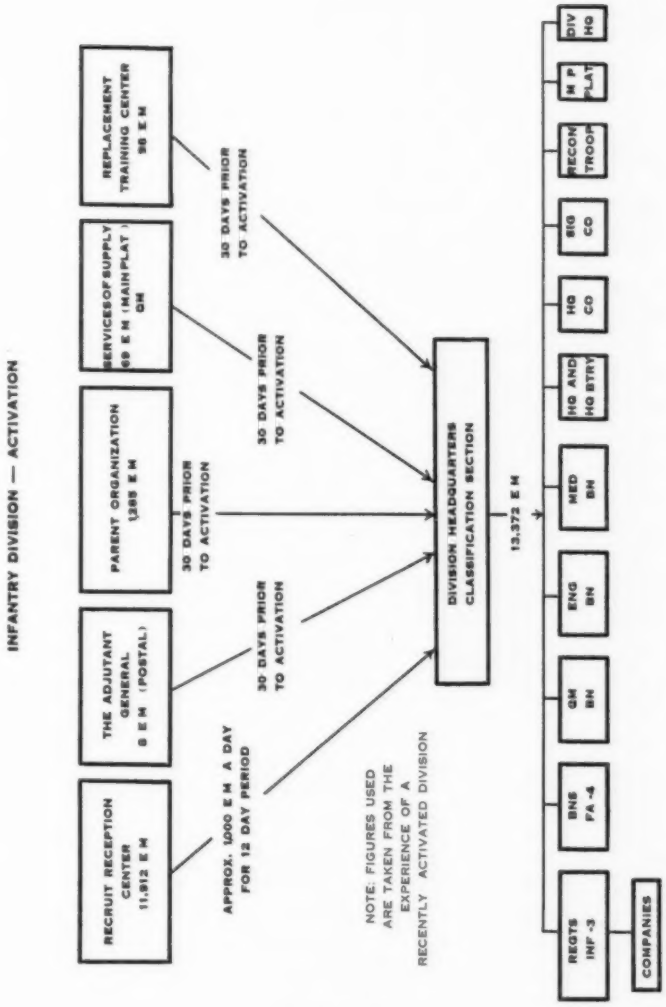

INFANTRY DIVISION — ACTIVATION
RECRUIT RECEPTION CENTER 11,912 E M
THE ADJUTANT GENERAL 6 E M (POSTAL)
PARENT ORGANIZATION 1,385 E M
SERVICES OF SUPPLY 69 E M (MAIN PLAT) QM
REPLACEMENT TRAINING CENTER 96 E M
APPROX. 1000 E M A DAY FOR 12 DAY PERIOD
30 DAYS PRIOR TO ACTIVATION
30 DAYS PRIOR TO ACTIVATION
30 DAYS PRIOR TO ACTIVATION
30 DAYS PRIOR TO ACTIVATION
NOTE: FIGURES USED ARE TAKEN FROM THE EXPERIENCE OF A RECENTLY ACTIVATED DIVISION
DIVISION HEADQUARTERS CLASSIFICATION SECTION
13,372 E M
REGTS INF -3
BNS FA -4
QM BN
ENG BN
MED BN
HQ AND HQ BTRY
HQ CO
SIG CO
RECON TROOP
M P PLAT
DIV HQ
COMPANIES

FIGURE 73.

Diagramatic scheme of activation of a recent division.

4. The division classification team should be established by D-10 to permit adequate time for training this group in how to receive, sort, and assign the men to be received between D and D+15. Usually the regiment located nearest the railroad will be designated as the housing and rationing regiment to perform the housekeeping for the incoming recruits. Officer members of the classification team include the division classification officer, the assistant division classification officer, and unit personnel officers (or their equivalent) of the division, so that there is at least one officer for each of three infantry regiments, field artillery component, quartermaster and military police detachment, engineering and signal component, and medical and reconnaissance component. These officers will be assisted by sufficient trained clerical personnel to sort and assign as many as 1,000 men per day.

5. During the 10 days immediately preceding D day, selected men of the enlisted cadre are taught the "why, when, where, what, who and how" of classification. This is done by means of a division classification school which is organized and operated by the division classification officer and his assistant. Sufficient men are chosen from this group to form a division classification team, and these men are placed on special duty with the division classification office during the activation period. Others of the group serve as assistants to the unit personnel officers in their daily classification of skills and degrees of intelligence within their own regiments.

D Day and After

1. The balance of the personnel of the division (who will probably come from reception centers, that is, almost directly from civilian life) will arrive between D and D+15. Usually, approximately 450 men will arrive the first day, 750 the second day, then 1,000 a day for a week or ten days, finally tapering off until the enlisted strength of the division is completed by D+15.

2. Each day, the unit personnel officer of the housing and rationing regiment (or another designated officer) secures all records from each incoming train commander. These records are checked against the total number of men who arrived, and the Forms 20 are extracted and brought directly to the classification building (*A* in figure 74).

3. These cards are divided evenly into as many groups as there are selector units (*B* in figure 74). The operator of each selector unit first separates from his group the basics (those with no skills). Then using the selector unit he sorts out the skills, by specification serial number, required by the division. A specification serial number (SSN) is a three-digit number used to describe the particular civilian or military skill of the man. See AR 615-25 and AR 615-26. These numbers relate directly to the punched-out portions of the Forms 20 and are used in the mechanical selection of particular skills.

4. Other clerks of the division classification team consolidate the cards of each specification serial number (SSN) as pulled from the various machines, and place these cards on separate tables (*C* and *D* in figure 74) by numbers printed in sequence and representing the skills required in the division. Each skill is rearranged in terms of Army General Classification Test scores with the higher scores at the top of the pile.

5. The division classification officer and his assistant are located near tables *D* and *E* of figure 74. Seated at table *E* are members of the division classification team to represent each of the regiments or similar units of the division. These men have before them the assignment charts of their particular regiment or unit. The classification officer and his assistant pass the Forms 20 of those men who have had prior training in a particular arm or service to the team members at table *E* who represent that particular arm or service for activation purposes. They distribute to the unit personnel officers of each arm or service those specification serial numbers (SSN) which, in

SUGGESTED PROCEDURE FOR THE ASSIGNMENT OF MEN

ROUTE OF SOLDIERS
ROUTE OF RECORDS
1 DETRAINING POINT
2 TEMPORARY BARRACKS (FOR HOUSEKEEPING)
3 TEMPORARY ASSIGNMENT (FOR NOT MORE THAN 24 HOURS) A. SANITARY FACILITIES B. FOOD AND REST C. TRAINING, INCLUDING LECTURES, FILMS, ETC., AS DIRECTED BY COMMANDING GENERAL.
4 SPECIAL ORDERS. (PHYSICAL TRANSFER OF MEN IN ACCORDANCE WITH ASSIGNMENT ORDERS)
5
6
A RECORDS TO DIVISION HQ. FORMS 20 TO CLASSIFICATION BLDG.
B FORMS 20 SORTED BY SELECTOR UNIT OPERATORS.
C FORMS 20 SEPARATED BY SSN AS REQUIRED BY T/O OF
D DIVISION. ARRANGED ACCORDING TO INTELLIGENCE GROUPS. MEN WITH PREVIOUS SERVICE ISOLATED BY ARM OR SERVICE.
E DIVISION CLASSIFICATION OFFICER AND ASSISTANT ASSIGN MEN TO REGIMENTS AND SIMILAR UNITS WITHIN DIVISION IN ACCORDANCE WITH T/O'S.
F UNIT PERSONNEL OFFICERS CHECK CORRECTNESS OF ASSIGNMENT AND ASSIGN MEN TO COMPANIES AND SIMILAR UNITS.
G ASSIGNMENT ORDERS ARE PREPARED.
H ASSIGNED MEN ARRIVE AT COMPANIES. FORM 20 AND MAN BROUGHT TOGETHER FOR FIRST TIME HERE.
I INTERVIEW BY REGIMENTAL AND COMPANY OFFICERS. FORMS 20 ARE DELIVERED TO COMPANY WHERE THEY REMAIN UNTIL CALLED FOR BY UNIT PERSONNEL OFFICER. COMPANY COMMANDER SHOULD USE FORMS 20 IN MAKING ASSIGNMENTS WITHIN HIS COMPANY AND SHOULD MAKE THEM AVAILABLE TO COMPANY OFFICERS AS AN AID IN KNOWING THEIR MEN. ALL OFFICERS SHOULD, PRIOR TO D-DAY HAVE RECEIVED INSTRUCTION IN THE PROPER USE OF FORMS 20.

FIGURE 74.

their estimation, the unit can use to best advantage. The grades of intelligence are distributed proportionately. Care is likewise taken to distribute the non-specialists so that each arm may have not only a similar proportion of all grades of intelligence, but also of men indicated as having leadership ability. The clerks make appropriate entries for each assignment.

6. As each card is received by a unit personnel officer, he studies the card to make sure the arm or service he represents does not receive a man whose previous service was in some other branch; that the man fills a vacancy in the T/O; and that he really has the qualifications needed to fill the vacancy because he actually had that type of work in previous civilian or military life or has had wide experience in this SSN as a hobby (such as radio or photography), or falls within the family group of that SSN (AR 615-26). When any of these three qualifications is violated, he brings this violation to the attention of the division classification officer or his assistant for final ruling.

7. The unit personnel officers, in accordance with the desires of regimental or unit commanders, assign the men to companies by means of steps similar to 3, 4, 5, and 6 above. They are especially careful that:

a. Each unit receives its proportionate share of mental ability. It is expected that such units as headquarters companies will require a higher level of mental ability than a rifle company, but extremes should also be avoided.

b. No unit will be unduly burdened with the training of a disproportionate number of men in the lower brackets of mental ability.

c. Available occupational skills will be distributed where they are most needed.

d. Combat units will be given priority in the assignment of men with previous military experience or with demonstrated leadership ability.

e. Initial assignments will be made accurately in order to minimize the number of subsequent transfers. [AR 615-28; par. 2,*a*, (1), (2), (3), (5).]

8. Regimental commanders should consider such problems as *a*, *b*, *c*, and *e*, mentioned above, well before D day and give complete instructions to their unit personnel officers so that, once activated, the regiment may immediately proceed with training without delay caused by transfers.

9. Company officers should, as soon as possible after receipt of recruits, interview those men personally so that they may make tentative company and training assignments. Forms 20 will be made available to company officers for such purpose (AR 345-5, par. 28 *d*).

SECTION V

INTERVIEWING, AND HOW TO READ A FORM 20

Upon each person engaged in interviewing, rests the responsibility for securing information which is basic to proper assignment and training. The interviewer must be skilled in questioning—in drawing out the desired information from the soldier. To accomplish this objective, his first task is to establish a pleasant association with the soldier. Successful interviewing can hardly be accomplished while the soldier is fatigued, bewildered, or irritated. The interview should be opened with mention of something of interest to the soldier which will strengthen his confidence in the interview itself. Some officers prefer the "old home town" opening, where reference is made to some item of interest in the soldier's home town that might not be known to anyone who had not been in the town or had the interest to inquire about it prior to the interview. Other officers prefer to review the Form 20 to discover some interest that he possesses in common with the soldier . . . the hobby of fishing, for example, or experience in the grocery business.

Ample time should be allowed for the interview, which should be adjusted to the poise and alertness of the enlisted man. Impatience with slow talkers will often defeat the accuracy of the interview.

Questions should be worded so that they are easily understood. Inaccurate information is often obtained because the interviewer and the soldier fail to interpret the question in the same way. Questions which imply a certain answer usually get that answer, because the man being interviewed is either making an effort to please or wishes to end the interview as quickly as possible. Leading questions should be avoided.

Personal interviews by company officers should be held at the earliest possible time because a fuller knowledge of their men will lead to better presentation of the training by those officers. No officer can know his men until he has talked with them often and learned as much as possible about them.

While personal interviews are possible without reference to written records, and occasions may arise where this must be done, written records, particularly the Form 20, speed the interview to logical conclusions; permit early detection of points in a soldier's make-up that should be carefully observed; suggest channels for development of needed military skills in soldiers; and provide information that cannot readily be remembered about all enlisted members of a command.

The Form 20 should be reviewed before the interview and should not be visible to the man being interviewed. If the soldier sees the Form 20, he may feel that the honesty of his previous statements is being questioned. The greatest value in using the Form 20 will be obtained by relating one item to others shown on the form until a mental picture of the soldier is obtained. This mental picture should be confirmed by the picture obtained from the personal interview. Where the facts contradict the Form 20, a brief report should be made to the unit personnel officer in order that the Form 20 may be corrected.

All items on the Form 20 have value at one time or another. For example, the entries under "Height" and "Weight" provide a rough physical picture of the soldier. Is he tall, thin, stocky, fat, small? This matter of physique, confirmed by actual observation and combined with such factors as sports in which qualified, and age, will suggest whether he now has the necessary physical vigor and coordination, or whether these must be developed by the training program.

Items 16, 17, and 18 of Form 20 deal with various tests which may have been given to the soldier. (See AR 615-25). The three basic tests used as aids in the classification of enlisted men are the Army General Classification Test, aptitude tests, and trade tests. Test scores will be used only to supplement study of an enlisted man's work history, his education, and his interests.

The purpose of the Army General Classification Test is to provide a quick and reasonably dependable measurement of an enlisted man's ability to learn. It does not measure such qualities as honesty, leadership, knowledge of specific school subjects, or experience in specific lines of work. The grade received will be considered as one important element, among others, when the decision is made as to the duty in which the enlisted man will be most useful or the arm or service to which he should be assigned.

All enlisted men in the army receive the Army Classification Test. The Army Grade attained by the individual on this test may be interpreted as follows:

Group Score	*Normal Distribution*	*Interpretation*
Grade I (163-130)	8%	Very Rapid Learners
Grade II (129-110)	25%	Rapid Learners
Grade III (109- 90)	35%	Average Learners
Grade IV (89- 60)	25%	Slow Learners
Grade V (59- 42)	7%	Very Slow Learners

The "normal distribution" of Army General Classification Test scores is based on *all* men entering the Army. It should not be assumed that any given regiment will have a distribution of scores identical to this average. Various priorities such as air corps, signal corps, and the various officer candidate schools call for men in Grades I and II, thus diminishing the proportion of men in these grades who will be found in individual infantry units. A typical infantry regiment or division would likely have the following distribution:

Group Score	*Distribution*
Grade I	2% to 5%
Grade II	18% to 23%
Grade III	30% to 35%
Grade IV	30% to 40%
Grade V	8% to 14%

Men in Grades I and II, when they also possess leadership and other necessary qualifications of education or experience, are potential officers and noncommissioned officers. In connection with officer candidacy, AR 605-25 (Officer Candidates) states, among other things, that the regimental or similar unit commander will check the applicant's General Classification Test score. If this score is less than 110, the regimental or similar unit commander may authorize a retest. However, not more than two retests will be authorized for the purpose of determining a man's qualifications to attend an officer candidate school, and in any retest a different General Classification Test from any previously taken by the applicant will be employed.

Grade V includes some men whose mentality is so limited that they cannot be expected to perform even simple duties, or to exercise the necessary precautions for their own safety or for the welfare of their associates. These should be

referred to a reclassification-disposition board for consideration for discharge under the provisions of AR 615-360. Most men in Grade V can become useful soldiers, and every effort should be made to take advantage of whatever skills and aptitudes they possess. Frequently, by performing routine tasks, they can release more skilled men for more exacting combat duties. (AR 615-26, Section III.)

While certain arms and services have special aptitude tests, the three in general use are the Mechanical Aptitude Test which measures an enlisted man's aptitude for mechanical work; the Clerical Aptitude Test which measures the speed and accuracy with which an enlisted man can do detailed paper work; and the Code Aptitude Test which measures an enlisted man's aptitude for radio code work.

The Mechanical Aptitude Test and the Code Aptitude Test are given at reception centers. The Clerical Aptitude Test is given in replacement training centers and in units. The grades achieved by the enlisted man in these tests are indicative of the man's probable success in these kinds of work. For example, the Army Grade made by a man on the Mechanical Aptitude Test may be interpreted in terms of his chances of succeeding at general mechanical work as follows:

Group Score	*Chance to Do Better Than Average*
Grade I (163-130)	81%
Grade II (129-110)	67%
Grade III (109- 90)	50%
Grade IV (89- 60)	33%
Grade V (59- 45)	19%

Trade tests are used to determine whether or not a man has the degree of knowledge which he professes to have in a given occupation. Four types of trade tests may be used, the oral, the picture, the performance, and the written type. Trade tests may be given at any time in an enlisted man's service when it is desired to check upon his degree of skill.

From time to time new tests will be issued to units for tryout purposes in order to establish averages and standards for various groups. Every effort should be made by unit commanders and their subordinate classification agencies to cooperate in securing these data in the form required and with the greatest possible promptness. In order to avoid confusions and repetition of effort, no new classification aptitude or trade test will be given without the prior approval of The Adjutant General. (AR 615-25.)

SECTION VI

CONTINUOUS CLASSIFICATION

This section continues the discussion of factors on the Form 20 and concludes with a discussion of the reports which are drawn from this form.

Continuous Classification

By The Unit Personnel Officer

The closest possible cooperation between the unit personnel officer and the company commander is necessary to ensure continuous classification. Direct contact between the two might be authorized by the regimental commander for the *sole* purpose of keeping records current and correct. Wherever information obtained in this manner indicates that action should be taken, involving transfer or change of duty, appropriate command channels should be followed.

Four sections are provided on the Form 20 especially for continuous classification during an enlisted man's service: items (22), Service Schools, Arm or Service; (25) Preferred; (27) Classification in Military Specialities; and (29) Record of Current Service. Item (28), Remarks, may also be used. All entries in these sections will be made by the classification group of the unit personnel section in accordance with existing regulations. Company and other commanders will provide the information on which such entries are based, but will make no entries on the Form 20, except to initial certain specific certifications.

Item (22). Whenever an enlisted man has satisfactorily completed a course at a service school, appropriate entries will be made in the spaces provided under this item. If possible, this entry should be made at the school itself and the "School Rating" initialed by a responsible officer.

Item (25). A check mark in the rectangle designated "Preferred" indicates that the enlisted man is satisfactorily placed in a unit and should not be transferred from that unit without consulting his unit commander. It is suggested that such a check mark be dated and initialed by the officer in immediate command, and that, in case transfer of the soldier is proposed or his commanding officer is transferred, this "Preferred" rating be reviewed and either verified or changed.

Item (27). After an enlisted man has completed basic training or has been assigned to a specific duty in a permanent unit, an entry based on information from the soldier's immediate commander will be made by the personnel officer in the column headed "Designation." The enlisted man will be rated as "Potential," "Semi-skilled," or "Skilled" by reference to the manner in which he fulfills the requirements as stated in AR 615-26, Section II. This description will be followed by the appropriate specification serial number obtained from AR 615-26. The purpose of the "Potential" classification is to indicate that the enlisted man

has had training which fits him for a particular military specialty, or has demonstrated ability on an aptitude test, but has had no qualifying experience. Normally, regimental personnel offices will make no entry in these columns until an enlisted man has acquired semi-skilled or skilled proficiency in a military specialty. During the course of an enlisted man's service, he may acquire semi-skilled or skilled rating in more than one military specialty. These additional military specialties will be added on subsequent lines. The date of classification will be given and should be initialed by the officer making the proficiency rating. To the end that classification may be continuous, ratings of skill entered on the Form 20 as a result of interviews should be changed whenever actual practice during a suitable period indicates erroneous entries or omissions. As an enlisted man attains skill in particular occupations or military specialties as a result of training, appropriate new entries should be made. The company or similar unit commander should constantly work toward the goal that his men constantly gain new and higher skills, and that once a high degree of skill is attained, that skill be not lost through lack of use. A skilled (as of 1940) rifleman may no longer be even semi-skilled if he has not fired a rifle since that date.

Item (29). Entries will be made under Record of Current Service when an enlisted man is transferred to another unit or when his duty within the unit is materially changed. The entries will indicate the general nature of duties and permanent or temporary grades held. No entries will be made for minor changes in duty assignment. In the case of limited service, the surgeon will indicate his approval of the duty assignment by initialing in the space designated "Surgeon's O.K." It is of the highest importance that item (29) bear close relationship to item (27). The present duty should, if possible, call for the exercise of the highest skill attained by the soldier. A radio operator who is working as a truck driver is losing his radio skill and is less useful to the army. It is expected that a well-trained unit will possess some higher skills that cannot be used

immediately, otherwise that unit will lack the organizational flexibility needed in combat. However, such a unit should be willing on occasion to share this excess of skills with less fortunate units, both in the interest of a balanced army and for the sake of the individual soldier.

Item (28). The "Remarks" space is for additional information required by any item where the space provided is insufficient. It is also used to record important information not called for on the card and which would help in assignment or reassignment. In making an entry here, reference should be made to the item number to which the information belongs. Such entries should be brief, and personal appraisals should be initialed by the officers making them.

Continuous Classification by Other Commanders

Frequently, it may be advisable for the company or similar commander to take the initiative in regard to continuous classification. Such action will usually involve reclassification and frequently result in reassignment. Reclassification may be necessary because the enlisted man is unable to perform an assigned duty satisfactorily, or because the man is assigned to a duty which does not make full use of his intelligence, abilities, skills, training, or aptitudes.

Reclassification should take place in regard to such categories as:

1. Specialists—As men gain new skills in the process of training, reclassification becomes necessary.

2. Enlisted men of long service—Enlisted men of long service whose age hinders their physical competition with younger men will be reclassified with a view to reassignment to duties commensurate with their physical ability, experience, and years of service.

3. Limited service—See WD Circular No. 327, 1942.

When, in the opinion of a company or similar commander, an enlisted man will be of more value in a different assignment, the commander will make such reassignment within the organization or, if an appropriate vacancy does not exist, will report the essential facts to the unit personnel officer. This officer will reinterview the man concerned and, if reported facts are verified, will initiate the necessary action to transfer the enlisted man to another unit. When, in the opinion of a regimental or similar unit commander, the best interests of the service indicate utilization of the skills or aptitudes of an enlisted man in an organization other than that in which he is assigned, he will take the action necessary in order to effect such transfer or, when necessary, make appropriate recommendations to higher authority. Such reclassification and reassignment will be accomplished monthly, preceding publication of the Inventory of Specialists which is discussed later in this article. In order to balance available skills, commanders of units will make such transfers between units of the same or different arms or services as may be necessary within their command (AR 615-200). After such transfers within the regiment, regimental commanders will report overages by military specification serial number, color, and arm or service, to the division commander, who will accomplish such transfers between units of the same or different arms and services as may be necessary within his command. Upon completion of the above, remaining overages will be reported to higher authority for similar action.

Under no circumstances will a man possessing scientific, professional, or technical skills of which there is an acute shortage in the army, be continued in an assignment which does not make full use of these abilities.

Continuous Classification By Periodic Reports

For the use and information of the regimental commander and subordinate unit commanders, the unit personnel officer directs and supervises the preparation of a number of periodic reports.

1. *The Informational Roster.*—This roster should be accomplished or reviewed monthly and is an extract of the Form 20, listing the men in the company alphabetically. Items shown are name, grade, army serial number, Army General Classification Test score, education, civilian occupation and its specification serial number, military specialty and its specification serial number, and present duty with its specification serial number and degree of skill. (See figure 75 for typical example.) All of the items, with the exception of those pertaining to present duty, are placed on the roster by the unit personnel section as informational data for use by the company commander. The roster is then forwarded for completion to the company or similar unit where the correct military specialty, present duty, and degree of skill are entered. At the same time, all changes in rank can be shown. The completed roster is then returned to the unit personnel office, where it affords correct current information which can be posted on the Forms 20 to keep them up-to-date and readily usable. A month later, the roster is returned to the company for notation of further change and return, thus establishing a continuous method for reporting changes and keeping the Forms 20 current. Each such roster will carry a statement to the effect that Forms 20, recording the present status of the enlisted man, are available to organization officers.

Unless items are checked at their source, they are of little value, and under field conditions it is frequently impossible to contact units personally. Thus, the Informational Roster becomes a link between company officers and unit personnel officers. Through this roster, an overall personnel picture is given the company commander. This will often prove invaluable in making assignments, issuing

INFORMATIONAL ROSTER (Compiled from WD AGO Forms 20, on file at the Headquarters, which are available to Unit Commanders.)

Unit Co. A, ___th Infantry Regiment Location Ft. Benning, Ga. Date 1-1-43

NAME	ARMY SERIAL NUMBER	AGCT SCORE	YRS OF EDUC	CIVILIAN OCCUPATION		MILITARY SPECIALTY		PRESENT DUTY			
				Title	SS No	Title	SS No	Title	SS No	*S	*SS
Alston, R. E., Pvt.	32336576	IV87	8	Truck Driver	245	Non-Specialist	521				
Anderson, Frank F., Pfc.	33058629	III97	12	Machine Operator	113	Automatic Rifleman	746				
Arnold, Reuben, Cpl.	22231567	II114	11	Auto Servicemen	316	Squad Leader	653				
Axelson, Axel A., S/Sgt.	21043499	II116	13	Chain Store Mgr.	352	Rifleman	745				
						Automatic Rifleman	746				
						Section Leader	652				
						Platoon Sgt.*	651				
Banks, Thomas W., Pvt.	32014102	III91	9	Salesman	321	Rifleman	745				
						Truckdriver, Light*	345				
Boteswill, Jeremy K., Pvt	33033045	IV75	9			Ammunition Handler	504				
						Light Machine Gun*	604				
Bechtold, John L., Sgt.	30014523	III99	12	Stock Clerk	324	Rifleman	745				
						Light Machine Gun.	604				
						Squad Leader	653				
						Section Leader*	652				

*NOTE TO UNIT COMMANDER: "S"-Skilled, "SS"-Semiskilled, Check ONE, & ONLY ONE, column to indicate manner of performance at present duty. If either "S" or "SS" is checked, the EM will be given that duty as a Military Specialty. *The soldier is now being reported by this number in the Inventory of Specialists. The number designates his most important military specialty.

FIGURE 75.

grades and ratings, and equalizing intelligence and skills within the company. For example, the company commander may find that his second platoon, which is a constant source of trouble, does not have its proportionate share of intelligence, or lacks certain skills essential to efficient platoon operation. In effect, the roster provides data which facilitates monthly reclassification. Past military skills attained by the soldier, undiscovered civilian skills, and unusual skills or abilities can be uncovered by this procedure.

In some instances, unit personnel sections make up the Informational Roster, have the form mimeographed in small quantity, and use the rosters for a number of months by deleting names of personnel losses, correcting changes of status, and adding names of new men. In other instances, requests are made to machine records units for as much of the required information as they can provide. This service is available from machine records units, and rosters of this type are satisfactory after adding the additional columns and information. Either method is satisfactory and saves considerable clerical work.

Since the machine records units are an integral part of the army personnel system, though not strictly a part of the classification system, a few words of definition may be useful here. Fundamentally, the purpose of machine records units, which are located in Service Command headquarters and similar commands, is to provide the army with the most rapid personnel accounting possible. These units furnish higher echelons and the War Department with rosters, strength returns, unit historical records, and other desired statistical records previously prepared manually by company and regimental clerical personnel. The basic tool of machine records units is the International Business Machine punched card. One of these cards is maintained for each enlisted man in the army. The information which goes on this card is taken from the soldier's Form 20 as a result of specified reports from unit personnel sections. Therefore, close interlocking with classification is essential if the machine records

units' cards are to be current and accurate. If the Form 20 is not correct and up-to-date, the machine records units' cards can never reflect the true situation.

For still more rapid personnel accounting, machine records units are in the process of changing the manner of reporting duty assignment from an adaptation of specification serial numbers to reporting duty assignments by "Job Families." This is covered in AR 615-26, Section II. Machine records units are more fully discussed in AR 345-5.

2. *The Inventory of Specialists.*—This report is prepared monthly by the unit personnel office in accordance with AR 615-28. This report is tabulated directly from Item (27) on the Form 20 and should be made after the completion of transferring information from the Informational Roster to the Form 20. This inventory will be made by separate units within the regiment for use by the regimental and subordinate commanders. Only a consolidated inventory for the entire regiment need be submitted to division. The Inventory of Specialists (see Figure 76) contains the following information:

a. Specification serial number.—This line lists the various military specification serial numbers called for in the T/O of the regiment or subordinate unit.

b. Authorized T/O.—This line lists the total number of each technical rating authorized in the current T/O for the unit.

c. On hand.—This line lists the total number of men now in the unit and qualified in this military specialty.

d. Over or short.—This line summarizes numerically the difference between the T/O and the number on hand.

e. Need.—This line lists the total number of men qualified for each military specialty necessary to perform the unit function. It does not necessarily conform to the T/O. For example, housing conditions may be such in a particular locality that it is necessary to call on one company to feed

an extra group of officers, necessitating the services of an extra cook. The "Need" column will then show an extra cook.

In The Inventory of Specialists, each enlisted man is shown once. Since a number of men may have more than one military occupational specialty, this presents a problem. A man will usually be reported in terms of his most important specialty—the one requiring the highest degree of skill and the most training.

These inventories form the basis for personnel requisitioning as they show present strength and needs by specification serial number. With accurate inventories, any given type of specialist may be quickly found for the various special assignments which occur constantly and many shortages and overages which appear can be equalized within organizations and without reference to higher authority. Inventories show the true conditions existing within units and, when used in conjunction with such personnel aids as the Informational Roster, form the basis for scientific equalization of units.

3. *Reports of Special Skills.*—Following the completion of reassignments within the regiment to make use of all available skills as reported on the Informational Roster, enlisted men whose skills cannot be utilized to the utmost will be reported to the next higher echelon which will take similar appropriate action. Frequently, the skills to be reported will be specifically listed in letters from The Adjutant General. These will be skills in which definite shortages exist in the army. Since these calls can be in part anticipated, some regiments keep a card file on special skills of which they or the army as a whole may have need. The uses of such a file are many. For example, a Russian is to visit the regiment. If there is an enlisted man in the regiment who interprets Russian fluently, he may be useful in escorting this visitor. Or, some model airplanes are needed to aid in training in aircraft identification. A skilled model-maker could turn them out if given special duty for a short time, even though his greatest value to the regiment

INVENTORY OF SPECIALISTS

DATE 1-1-43

UNIT ___ th Infantry Regiment
Rifle Companies

LOCATION Ft. Benning, Ga.

SPECIFICATION SERIAL NO.		014	055	056	060	821	824	TOTALS
Unit	Authorized T/O	-	-	1	4	1	1	193
	On Hand	2	-	1	4	1	1	173
Co. A	Over or Short	2/o	-	-	-	-	-	20/s
	Need	2	-	1	4	1	1	197
Unit	Authorized T/O	-	-	1	4	1	1	193
	On Hand	2	1	1	4	1	1	171
Co. B	Over or Short	2/o	1/o	-	-	-	-	22/s
	Need	2	0	1	4	1	1	197
Unit	Authorized T/O	-	-	1	4	1	1	193
	On Hand	2	1	1	4	1	1	173
Co. C	Over or Short	2/o	1/o	-	-	-	-	20/s
	Need	2	-	1	4	1	1	195
Unit	Authorized T/O	-	-	1	4	1	1	193
	On Hand	2	1	1	4	-	2	172
Co. E	Over or Short	2/o	1/o	-	-	1/s	1/o	21/s
	Need	2	-	1	4	1	1	193
Unit	Authorized T/O	-	-	1	4	1	1	193
	On Hand	2	-	1	4	1	1	182
Co. F	Over or Short	2/o	-	-	-	-	-	11/s
	Need	2	-	1	4	1	1	193
	Authorized T/O	-	-	5	20	5	5	965
	On Hand	10	3	5	20	4	6	871
TOTALS	Over or Short	10/o	3/o	-	-	1/s	1/o	94/s
	Need	10	-	5	20	5	5	975

FIGURE 76.

might be as a heavy weapons noncommissioned officer. Or, the regiment may have several surveyor's instrument men who are useful as squad leaders, but not irreplaceable. The army may at the same time have need of surveyor's instrument men while the regiment is merely interested in having competent squad leaders to replace them.

Continuous Classification By Means of Running Rosters

For the information and guidance of the regimental commander, the unit personnel section maintains several types of running rosters.

1. *Personnel Inventory.*—Unit personnel sections will keep a Personnel Inventory by means of a current table of personnel allowances, overages, and shortages by military occupational specialty of each unit within the organization. Shortages and overages of military specialists should be equalized by transfers within the organization. Remaining shortages and overages should be reported promptly by means of the consolidated inventory of specialists to the next higher echelon having assignment jurisdiction for similar adjustment within that command. Unit personnel officers will prepare requisitions at proper intervals to bring their units to numerical and specialist strength. Upon receipt of the requested replacements, they should be attached to units as circumstances warrant until previous classifications are verified, or, when necessary, reclassifications and substitutions are made. Upon completion of this action by the unit personnel officer for the regimental commander, they will be assigned by the unit personnel officer, who is also assistant adjutant, to subordinate units within the regiment in accordance with these unit's requirements. In assigning basic enlisted men to several units within the regiment, the unit personnel officer should prorate those whose record shows both high and low Army General Classification Test scores.

2. *Officer Candidates.*—The unit personnel officer will maintain a running roster of all men within the regiment who have the necessary physical, mental, moral, leadership, and educational qualifications to make them potential officer candidates. (See AR 625-25, for requirements for officer candidacy.)

3. *Cadres.*—When cadres are to be selected, the unit personnel officer will advise organization commanders of all men assigned to their units who have the qualifications. From such a list or roster, the organization commander will indicate individuals recommended for new cadres within the quota allotted his unit.

Present plans indicate that each newly activated division will be called upon at some time after receiving its filler of men, to furnish an enlisted cadre for another new division. Definite dates for furnishing cadres will be given parent units in each case.

Customary procedure on notification to form a cadre, is for the parent unit to submit a special requisition in the usual form (W.D., A.G.O. Form 210) through channels to The Adjutant General for replacements in the number necessary to bring the parent unit to its authorized strength, plus the strength of the cadre being furnished. Personnel requisitions for such replacements need not invariably call for men of the same specification and job serial number as specified in the cadre Table of Organization.

Continuous Classification By Special Service

Almost daily, the regimental commander will receive specific requests which require some action in relation to the personnel of his regiment and their placement or transfer. Men who speak Norwegian fluently may be needed, and he will be required to report on them. There may be a shortage of able seamen that necessitates transfer of all so qualified from his organization. A new school may be offering

advanced training in regimental supply and he is ordered to provide 10 students. Each such request can be investigated for him by the unit personnel officer and the necessary information provided. Such typical services by the unit personnel officer would include:

1. *Selection of enlisted men for Special Service Schools.*—The unit personnel officer will select and indicate all men within an organization who have the required qualifications. This list will then be turned over to the organization commanders for their information and guidance in making the final selection.

2. *Awards of grades and ratings.*—Previous to making awards of grades and ratings, the organization commander will consider the qualifications of all enlisted men of his command as recorded on their Forms 20. Requests to the regimental commander for such appointment or promotion will carry a statement to the effect that the qualifications of all men of his command as recorded on their Forms 20 were considered as a factor in making such recommendations and, in the organization commander's opinion, individuals recommended for appointment or promotion possess the highest qualifications therefor within his command.

3. *Organizational Treatment of non-English speaking men, illiterates and men of limited mental capacity.*—There are activities, often of a routine nature, in which men who test low in intelligence or who are illiterate, or non-English speaking, can perform satisfactory service. (See AR 615-26 Section III for detailed information about such activities.) Civilian experience, if properly evaluated, offers an important index of a man's potential usefulness to the army. Even if a man fails to meet the critical scores on the classification tests, he may still possess sufficent talent to warrant assignment to a military specialty if his record of civilian experience indicates satisfactory job performance. The measure of the effectiveness with which his duties were performed is provided principally by two indications; length of time in one job, and wages in relation to the scale prevailing for that grade of work in his locality.

Individual differences are the keynote of proper assignment. Unit personnel officers are not usually in a position to devote detailed study to each case. However, unit personnel officers should do everything possible by conference with commanders within the regiment to aid in placing these men (most of whom will score Grade V on the Army General Classification Test) where they will be of most value to the service.

The advice of the division personnel consultant will usually be available to aid in decisions concerning problem soldiers. This advice should be sought in all such cases, regardless of what intelligence group the subject soldier is a part.

SECTION VII

SUMMARY OF THE RESPONSIBILITIES OF THE UNIT PERSONNEL OFFICER TO THE REGIMENTAL COMMANDER IN RELATION TO CLASSIFICATION PROCEDURE

The regimental commander is responsible for the appropriate assignment, reclassification, and reassignment when necessary, of all enlisted men of his command. The unit personnel officer, as assistant adjutant, is the regimental commander's agent in this action, and as such, is responsible for:

1. Maintaining the Form 20 and all other data essential in considering personnel for assignment, transfer, or promotion.

2. Furnishing information to company or unit commanders concerning enlisted men who may be under consideration for promotion, special detail, or transfer.

3. Preparing monthly Informational Rosters by company or similar unit showing essential data of value to commanders.

4. Making organizational assignments of newly arrived replacements and of reclassified enlisted men within the unit.

5. Constructing periodic Inventories of Specialists as directed by AR 345-5.

6. Recommending reassignments of enlisted men who have been incorrectly assigned.

7. Making periodical check of the duty assignment of all enlisted men in the regiment and comparing such assignment with the military qualifications of such personnel, keeping the regimental commander informed on the utilization of existing skills within the unit.

8. Gathering, compiling, and supplying to the regimental commander, facts which may be used in answering special requests.

In addition to the duties which the unit personnel officer is qualified to perform, he may be able to suggest how the regiment may receive aid in classification procedures by consultation with the division classification agencies, the personnel technician, and the personnel consultant. Aids which may be rendered by the division personnel technician include:

1. Testing of all enlisted men with the Army General Classification Test, the Mechanical Aptitude Test, the Clerical Aptitude Test, and/or other special tests.

2. Conducting conferences on classification procedures to familiarize all officers within the command with the advantages of, and the necessity for, an efficient classification system.

3. Conducting schools for commissioned and enlisted personnel who are to operate the classification system.

Aids which may be rendered by the division personnel consultant include:

1. Providing consultant services on all psychological problems in connection with classification which arise in subordinate units.

2. Recommending assignment of personnel within the unit when special psychological problems are involved.

3. Acting as expert witness or adviser in connection with special boards and courts when requested to do so.

SECTION VIII

CLASSIFICATION OF OFFICERS AND WARRANT OFFICERS

In a vast and rapidly growing army, the increasing number of officers and warrant officers has necessitated the development of classification procedures to make equally certain that each officer and warrant officer is assigned where his abilities and skills will be of most use to the army. Consequently, within the last year there was introduced a form for officers and warrant officers similar to the Form 20 for enlisted men. This form is the Officer's and Warrant Officer's Qualification Card (W.D., A.G.O. Form No. 66-1). (See figures 77 and 78.) All officers of all components of the Army of the United States below the grade of general officer will be classified on this Form 66-1.

Here are listed the officer's name, serial number, branch of service, component, height, weight, date of birth, military service in the first World War, C.C.C. service as an officer, limited service, foreign residence or service, date and authority on extended active duty, dates of appointments and promotions, record of recent service and current duty, service and general schools attended, foreign languages, marital status and dependency, legal residence, emergency addressee,

(1) NAME ADAMS (LAST NAME) WILLIAM (FIRST NAME) HENRY (MIDDLE NAME)

(2) 0-36 SERIAL

(9) WAR SERVICE — YEARS | MONTHS | ARM OR SERVICE | COMBAT OR ADMIN DUTY

(10) C.C.C. SERVICE — YEARS | MONTHS | CORPS AREA | TYPE DUTY

(11) LIMITED SERVICE

(12) RESIDENC CONTINEN

(13) ENTR

(14) GRADE—APPOIN

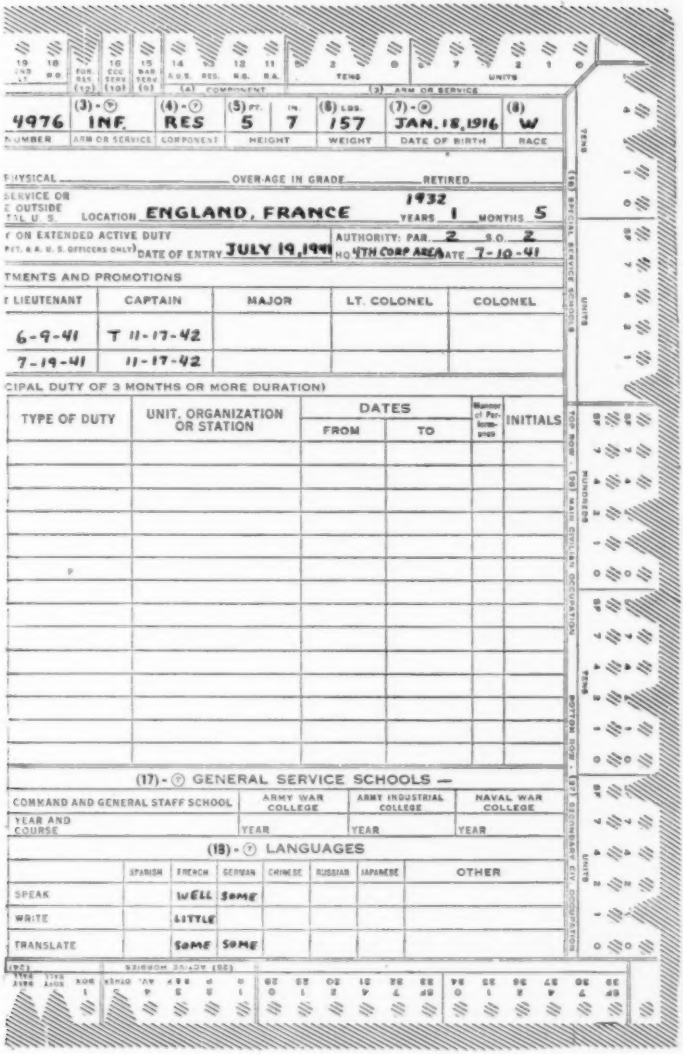
	WARRANT OFFICER (JUNIOR GRADE)	CHIEF WARRANT OFFICER	2nd LIEUTENANT	1st
DATE APPOINTED OR PROMOTED			5-27-38	
DATE OF RANK IN GRADE				

(15) RECORD OF SERVICE (ONLY PRIN

TYPE OF DUTY	UNIT, ORGANIZATION OR STATION	DATES FROM	DATES TO	Manner of Performance	INITIALS
INSTRUCTOR	GEN. SEC. A.D. T.I.S.	10-14-41	6-30-42	SUP	JDM
COMPANY EX.	CO. I 311TH INF.	7-2-42	10-17-42	SUP	JCS
CO. COMDR.	CO. I 311TH INF.	10-18-42	12-31-42	SUP	JWS
CO. COMDR.	CO. I 311TH INF.	1-1-43			

(16) SPECIAL SERVICE SCHOOLS

DATES FROM	DATES TO	SCHOOL	COURSE	Successful Completion (Yes or No)
7-19-41	10-14-41	INFANTRY	RIFLE - HEAVY WEAPONS	Y



(3) NUMBER	(4) ARM OR SERVICE	(5) COMPONENT	(6) HEIGHT	(7) WEIGHT	(8) DATE OF BIRTH	(9) RACE
4976	INF.	RES	5 ft. 7 in.	157 lbs.	JAN. 18, 1916	W

PHYSICAL _____ OVER-AGE IN GRADE _____ RETIRED _____

SERVICE OR E OUTSIDE THE U. S. LOCATION ENGLAND, FRANCE 1932 YEARS 1 MONTHS 5

ON EXTENDED ACTIVE DUTY (Pct. of A. U. S. officers only) DATE OF ENTRY JULY 19, 1941 AUTHORITY: PAR. 2 S.O. 2 HQ 4TH CORP AREA DATE 7-10-41

TMENTS AND PROMOTIONS

LIEUTENANT	CAPTAIN	MAJOR	LT. COLONEL	COLONEL
6-9-41	T 11-17-42			
7-19-41	11-17-42			

CIPAL DUTY OF 3 MONTHS OR MORE DURATION)

TYPE OF DUTY	UNIT, ORGANIZATION OR STATION	DATES FROM	DATES TO	Manner of Performance	INITIALS

(17) GENERAL SERVICE SCHOOLS —

COMMAND AND GENERAL STAFF SCHOOL	ARMY WAR COLLEGE	ARMY INDUSTRIAL COLLEGE	NAVAL WAR COLLEGE
YEAR AND COURSE	YEAR	YEAR	YEAR

(18) LANGUAGES

	SPANISH	FRENCH	GERMAN	CHINESE	RUSSIAN	JAPANESE	OTHER
SPEAK		WELL	SOME				
WRITE		LITTLE					
TRANSLATE		SOME	SOME				

FIGURE 77.
Front side of a typical Form 66-1.

OFFICER'S AND WARRANT OFFICER'S QUALIFICATION CARD

NOTE: DO NOT ATTEMPT TO FILL OUT THIS CARD WITHOUT FI

(19) - (L) MARITAL STATUS AND DEPENDENTS: SINGLE ____ MARRIED ✓

(20) LEGAL RESIDENCE: No & STREET 322 JOHNSON STREET

(21) EMERGENCY ADDRESSEE — NAME INEZ P ADAMS; STREET ADDRESS 430 WHITMAN PLACE

(22) - (L) ED

SCHOOL	NO. OF YEARS	NAME OF INSTITUTION
HIGH SCHOOL	4	WHEELING, W. VA.
COLLEGE OR UNIVERSITY	4	W. VA. UNIVERSITY, MORGANTOWN
POST GRADUATE		

(23) TE

TEST	DATE	SCORE	TEST	DATE	SCORE

(24) - (P) PARTICIP

1. BOXING	C XL	3. BASE BALL	✓ C XL	5. SKIING - SNOWSHOEING	
2. SOFT BALL	✓ C XL	4. BASKET BALL	✓ C XL	6. MOUNTAIN CLIMBING	

(25) - (P) ACTIV

1. RADIO ☐ 2. PHOTOGRAPHY ☐ 3. RIFLE OR PISTOL SHOOTING ☐ 4. AVIATI

(26) - (P) MAIN CIVILIAN OCCUPATION

TITLE OF YOUR POSITION OR JOB: SALESMAN

EXPLAIN WHAT YOU DID: SOLD LIFE INSURANCE BY PERSONAL CONSULTATION ON INDIVIDUAL PROBLEMS, REPRESENTED LARGE NATIONAL LIFE INSURANCE CO.

DATES EMPLOYED AND REMUNERATION: FROM 1939 TO 1941 — MONTHLY SALARY OR INCOME $200

SPECIFICATION SERIAL NO: AR 615-25 321 — OCCUPATIONAL DICTIONARY CODE 1-80.010

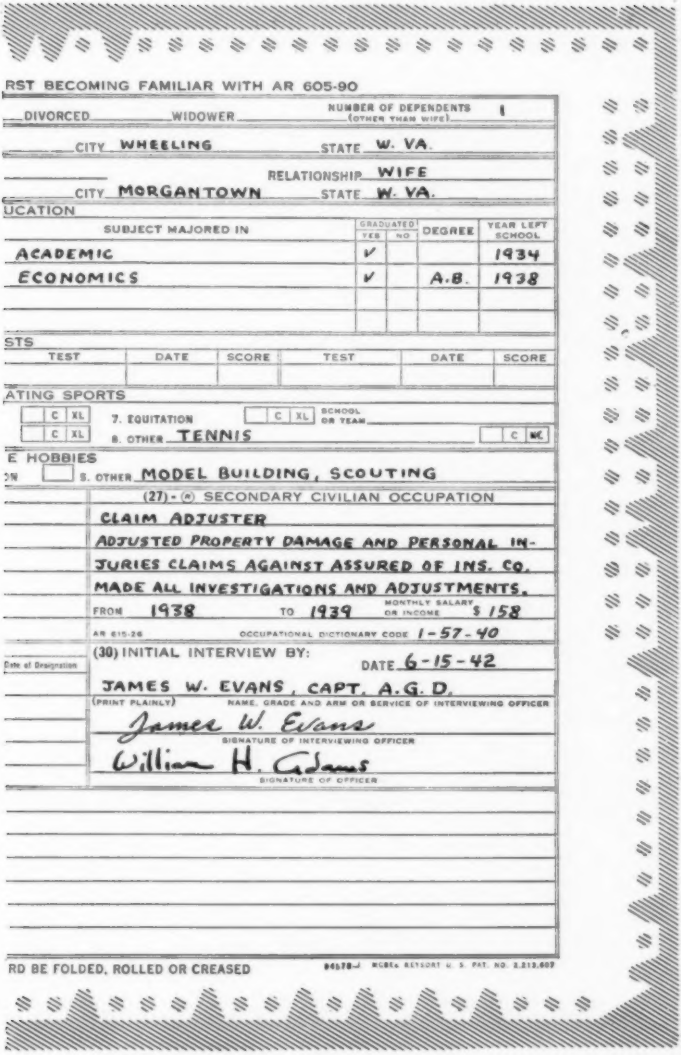
QUALIFICATION IN MILITARY SPECIALTIES

	DESIGNATION	SPEC. SERIAL NO.
(28) - (L) PRIMARY		
(29) - (L) SECONDARY		

(31) REMARKS: RELIGION: METHODIST

W.D. A.G.O. FORM NO. 66-1 FEBRUARY 1, 1942

IMPORTANT - UNDER NO CIRCUMSTANCES WILL THIS CA



RST BECOMING FAMILIAR WITH AR 605-90

DIVORCED WIDOWER NUMBER OF DEPENDENTS (OTHER THAN WIFE) 1

CITY WHEELING STATE W. VA.

RELATIONSHIP WIFE

CITY MORGANTOWN STATE W. VA.

UCATION

SUBJECT MAJORED IN	GRADUATED YES	GRADUATED NO	DEGREE	YEAR LEFT SCHOOL
ACADEMIC	✓			1934
ECONOMICS	✓		A.B.	1938

STS

TEST	DATE	SCORE	TEST	DATE	SCORE

ATING SPORTS

C XL 7. EQUITATION C XL SCHOOL OR TEAM

C XL 8. OTHER TENNIS C MC

E HOBBIES

ON 9. OTHER MODEL BUILDING, SCOUTING

(27)-(a) SECONDARY CIVILIAN OCCUPATION

CLAIM ADJUSTER

ADJUSTED PROPERTY DAMAGE AND PERSONAL IN-

JURIES CLAIMS AGAINST ASSURED OF INS. CO.

MADE ALL INVESTIGATIONS AND ADJUSTMENTS.

FROM 1938 TO 1939 MONTHLY SALARY OR INCOME $ 158

AR 615-26 OCCUPATIONAL DICTIONARY CODE 1-57-40

Date of Designation

(30) INITIAL INTERVIEW BY: DATE 6-15-42

JAMES W. EVANS, CAPT. A.G.D.

(PRINT PLAINLY) NAME, GRADE AND ARM OR SERVICE OF INTERVIEWING OFFICER

James W. Evans

SIGNATURE OF INTERVIEWING OFFICER

William H. Adams

SIGNATURE OF OFFICER

RD BE FOLDED, ROLLED OR CREASED

FIGURE 78.

Reverse side of a typical Form 66-1.

education, tests, participating sports, hobbies, occupational experience, primary and secondary military specialties, and religion.

These Forms 66-1 are normally maintained in the classification office of the division, but should be made available to all subordinate commanders for the officers of their command, especially for the purpose of making assignments and reassignments. It is the responsibility of the commanding officer of the headquarters where the qualification cards are filed to obtain and record properly all information pertinent to the classification of officers of that command so that assignment and reassignment may be accomplished on the basis of all possible information. It is the responsibility of the officer's unit commander to transmit to division or other headquarters where the cards are filed, any changes in the nature of duties, special military training received, or any other information pertinent to the qualifications of the officer. (AR 605-90, par. 5.) Since the classification officer of the division is an assistant adjutant, his office should handle the physical assembly and transfer of information to the Form 66-1.

All records pertaining to classification of officer personnel are restricted to offical use. An individual may be given his own classification but will not be given access to information relative to other individuals. (AR 605-90, par. 6.)

The Form 66-1 replaces efficiency reports on officers of company grade and warrant officers by means of a record of efficiency ratings kept as prescribed in Change 2 of paragraph 8, *o*, AR 605-90. An efficiency rating will be rendered on each officer by his immediate superior on June 30 and December 31 of each year. On these dates, manner of performance ratings will be made in Item 15 of all Forms 66-1.

When an officer is detailed or assigned to a principal duty, an entry will be made in pencil in the Record of Service, Item 15 of Form 66-1, in the space provided. Upon subsequent change of duty status (provided it was of at least three

months' duration in the case of company officers, or at least two months' duration in the case of field officers), or when the officer or his reporting superior is transferred, the entry will be completed in ink by the officer having custody of the card, and the card presented to the reporting officer who will enter and initial the manner of performance rating. Where it is not practicable for the reporting officer to enter and initial a manner of performance rating, the reporting officer will initiate a confidential letter report direct to the officer having custody of the card, stating the manner of performance rating. The latter will make and initial the entry in Item 15. When the length of service in a given assignment is less than the periods mentioned above, a manner of performance rating will be entered in pencil, on the Form 66-1 as guidance for the reporting officer who will be required to make the next June 30 or December 31 rating. At this time all pencil entries may be erased and the proper entry made in ink on the first available line. The manner of performance rating will be expressed by "SUP" to indicate superior; "E" to indicate excellent; "VS" to indicate very satisfactory; "S" to indicate satisfactory; and "U" to indicate unsatisfactory. (Change 2 of par. 8, *o*, AR 605-90.) Where any manner of performance rating on the Form 66-1 is unfavorable, an efficiency report as described in AR 600-185 will be rendered. Also, an efficiency report may be rendered on an officer of any grade at any time if, in the opinion of the reporting officer, the service appears to have been unusual either through merit or lack thereof. The suspension of periodic reports of officers below field grade may do grave injustice to outstanding individuals and to the army unless meritorious service is made a matter of permanent record in the War Department. (Par. 3, AR 600-185.)

Completed qualification cards (Form 66-1) will accompany each officer on each change of station. (Par. 5, AR 605-90.)

SECTION IX

THE BASIC REGULATIONS GOVERNING CLASSIFICATION IN THE REGIMENT

The following list contains only the basic regulations governing classification in the regiment. It is not an exhaustive list for the guidance of unit personnel and classification officers, but a framework list that will provide additional reading for further study of the specific operations of classification.

AR 615-25 ENLISTED MEN: INITIAL CLASSIFICATION

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III	Interviewing	14 - 17
IV	Initial Classification of Enlisted Men	18 - 21
V	Coding and punching soldier's qualification card	22 - 23
VI	Selecting and sorting soldier's qualification card	24 - 26
VII	Classifying enlisted man during his service	27 - 29
VIII	Filling of assignment requisitions	30 - 32
IX	Filing and disposition of soldier's qualification card	33 - 34
X	Examples of properly completed soldier's qualification cards	35 - 37

AR 615-26 ENLISTED MEN: INDEX AND SPECIFICATION FOR CIVILIAN AND MILITARY OCCUPATIONAL SPECIALISTS AND OCCUPATIONAL SPECIFICATIONS FOR NON-ENGLISH SPEAKING MEN, ILLITERATES, AND MEN OF LIMITED MENTAL CAPACITY.

		Paragraphs	*Pages*
Section I	Index and specification for civilian occupational specialists	1 - 7	1
II	Index and specifications for military occupational specialists	8 - 19	188
III	Occupational specifications for non-English speaking men, illiterates and men of limited mental capacity	20 - 25	695

AR 615-28 ENLISTED MEN: CLASSIFICATION, RECLASSIFICATION, ASSIGNMENT, AND REASSIGNMENT

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AR 345-5 ARMY PERSONNEL SYSTEM: PERSONNEL MANAGEMENT - PERSONNEL RECORDS

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AR 605-90 OFFICER'S AND WARRANT OFFICER'S CLASSIFICATION

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VII	Filing and disposition of officer's qualification cards	17 - 18
VIII	Machine records maintained in conjunction with officer's qualification cards	19

AR 605-95 (In preparation) OFFICER'S AND WARRANT OFFICER'S CLASSIFICATION: INDEX OF MILITARY SPECIALTIES.

NOTE: Since the preparation of this article, Changes No. 3 of AR 605-90 has been prepared and issued by the War Department. These changes concern the classification of Officers and Warrant Officers.

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